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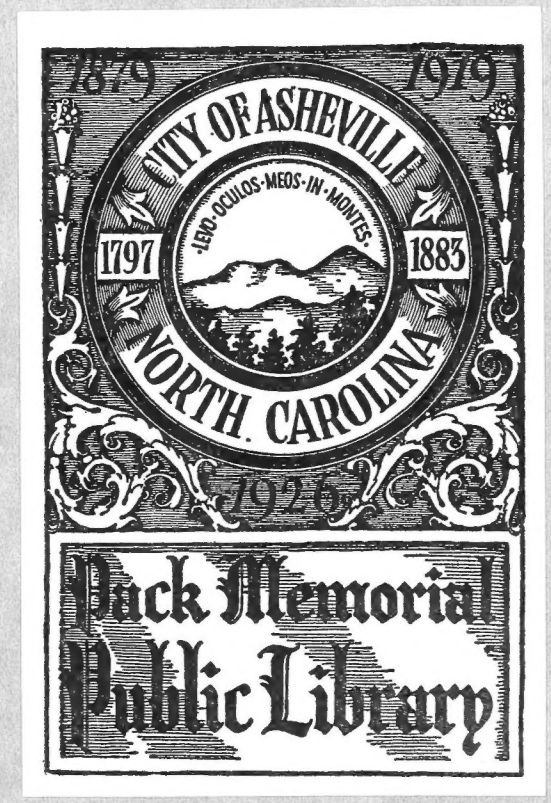
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DIVISION OF WATER CONTROL PLANNING
HYDRAULIC DATA BRANCH

FLOOD
OF
AUGUST 24-25, 1961

UPPER FRENCH BROAD RIVER BASIN

REPORT NO. 0-6189

KNOXVILLE, TENNESSEE
NOVEMBER 1961

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COVER PHOTO

A grim reminder of the damage that flood waters have done in the upper French Broad River basin. Photo shows inundation of bush bean field from overflow of Mud Creek near Mountain Home in Henderson County, North Carolina. Photo taken by Mr. June Glenn, Jr. of Asheville Citizen about 4:00 p. m. August 24, 1961, a few hours before the peak of the flood.

Tennessee Valley Authority
Division of Water Control Planning
Hydraulic Data Branch

FLOOD OF AUGUST 24-25, 1961
UPPER FRENCH BROAD RIVER BASIN

SUMMARY

Heavy rains on August 23 and 24, 1961, following a period of moderate to heavy showers which extended over the six days preceding, put streams in the upper French Broad River basin to stages which, in general, were the highest since April 1957. Mud Creek in the vicinity of Hendersonville, and the French Broad River over much of its length in Transylvania and Henderson Counties, were the highest since the severe floods of August 1940. One man lost his life when his automobile was swept off a bridge approach near Fletcher. Widespread overflow, coming at the height of the truck crop growing season, caused severe damages, exceeding the total damage in the summer of 1949 when three floods hit this area within a three-month period. Commercial and residential property was damaged at Hendersonville and Asheville. Roads and bridges were affected to a moderate degree.

After their heavy losses in 1949, many truck crop planters said they were going to cut back their operations because of the high flood risks involved in the upper French Broad River basin. Good market conditions and a favorable flood-loss experience since 1949 served to erase the memory of the early losses, however, and the acreages planted to truck crops has been increasing in recent years. The acreage in truck crops in the flood plain this year was nearly double the acreage which was affected by the first of the 1949 floods. Bottom land in use for the commercial raising of gladioli was several times that of 1949. Land in use for the usual farm crops of corn, small grains, hay, and pasture also was increased over 1949.

Flood heights along the French Broad River above and at Asheville equaled or slightly exceeded the highest of the 1949 floods, but were 2 to 3 feet below the stages reached in August 1940. At the U. S. Geological Survey gaging station at Blantyre, the river was 1.45 feet higher than in the July 1949 flood; but the discharge was slightly less in this flood, based upon the preliminary data available at this time. This change in the stage-discharge relationship has apparently resulted from increased vegetation growth on the banks and appreciable filling that has occurred in the channel

by industrial wastes introduced upstream. No changes are readily evident in overbank flow conditions.

Below Hendersonville, Mud Creek was a foot above the highest 1949 flood and about equal to the higher of the two floods in August 1940. Through Hendersonville and on the principal tributaries nearby, the 1961 flood exceeded the 1940 floods by amounts ranging from 1 to $2\frac{1}{2}$ feet. Changes and developments on the flood plain in Hendersonville affected flood heights so that at one point, at the intersection of U. S. Highways 25 and 176, the 1961 flood crest was approximately as high as for the great flood of July 1916. Water was in some 44 business firms and 3 low-lying houses. Streets and storm drains were damaged. In Asheville, where the French Broad was one foot above flood stage, 13 commercial developments were affected. Damage to roads and bridges, directly chargeable to the flood, was moderate.

The tangible losses due to the flood are estimated at $1,255,000. Of this amount, $943,000 was damage to truck crops alone. Losses suffered by gladioli raisers are estimated at $123,000. Loss to other crops amounted to $104,000 and damage to farm property and equipment and to land amounted to $16,000. Intangible losses resulting from the flood conditions have been estimated at 10 percent of the tangible total, making the total estimated losses for the flood $1,380,000.

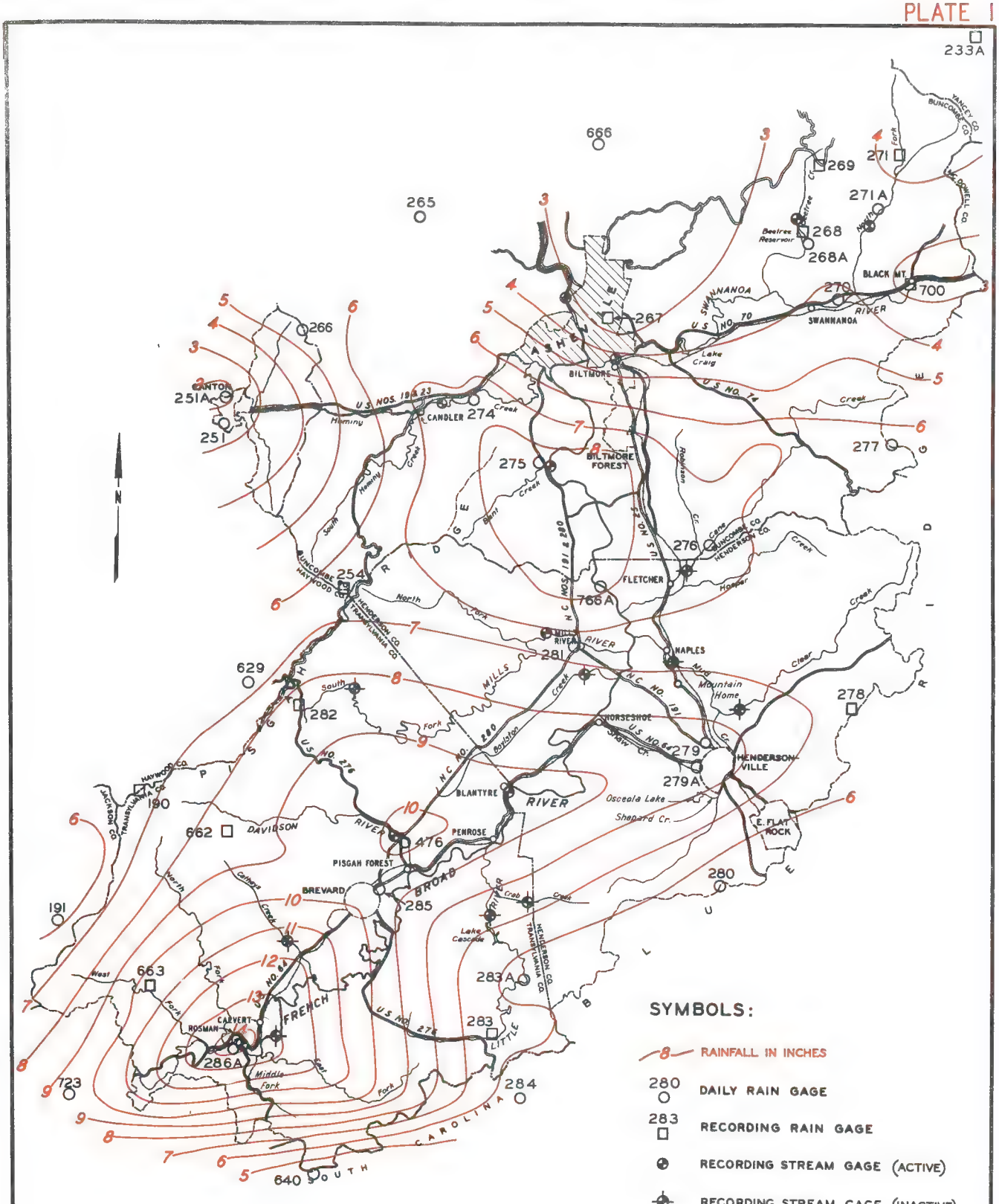
Appendix B contains representative photographs taken during and after the flood. Selected newspaper stories about the flood are reproduced in Appendix C.

STORM RAINFALL

Rainfall over the upper French Broad River basin was in excess of normal in three of the five months preceding August 1961. The cumulative excess amounted to about one inch, but more important from the viewpoint of the farmers and planters was the fact that there was seldom a period longer than two or three days without rain. This caused planting to be late in many cases. Crops made excellent progress in the late spring and summer, but wet ground interfered with cultivation and crop treatment.

August was particularly wet. Total rainfall for the month ranged from 7 or 8 inches near Asheville to nearly 29 inches at Rosman. Showers fell daily from the 1st through the 13th, with hard rains at many stations on August 4, 5, 8, and 10. Rosman reported 5.63 inches on August 8 and 3.49 inches on August 10.

PLATE I



SYMBOLS:

- 8 — RAINFALL IN INCHES
- 280 ○ DAILY RAIN GAGE
- 283 □ RECORDING RAIN GAGE
- RECORDING STREAM GAGE (ACTIVE)
- RECORDING STREAM GAGE (INACTIVE)

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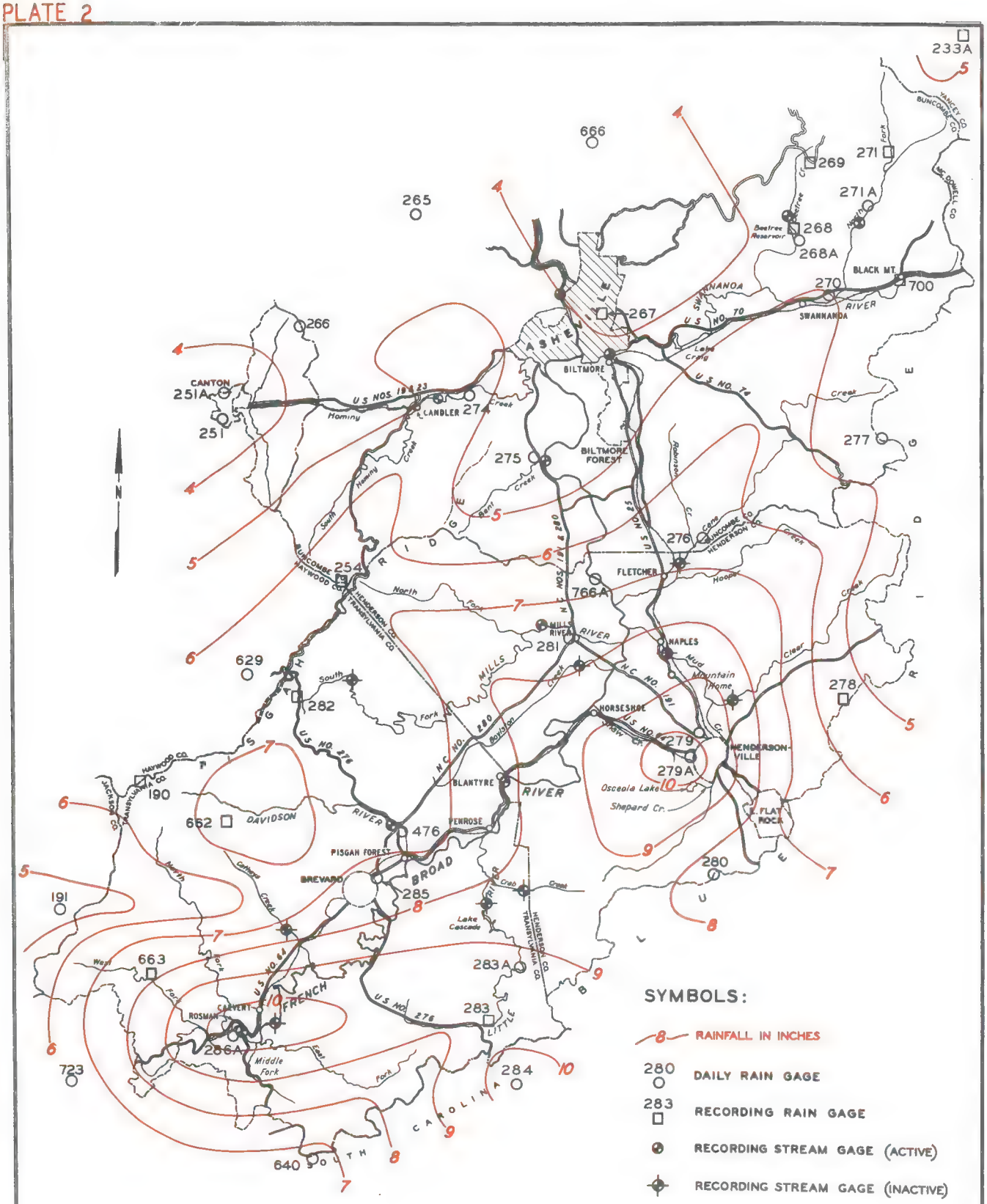
ANTECEDENT RAINFALL DURING AUGUST 1-23, 1961

UPPER FRENCH BROAD RIVER BASIN

Scale 0 2 4 6 8 10 Miles

PLATE 2



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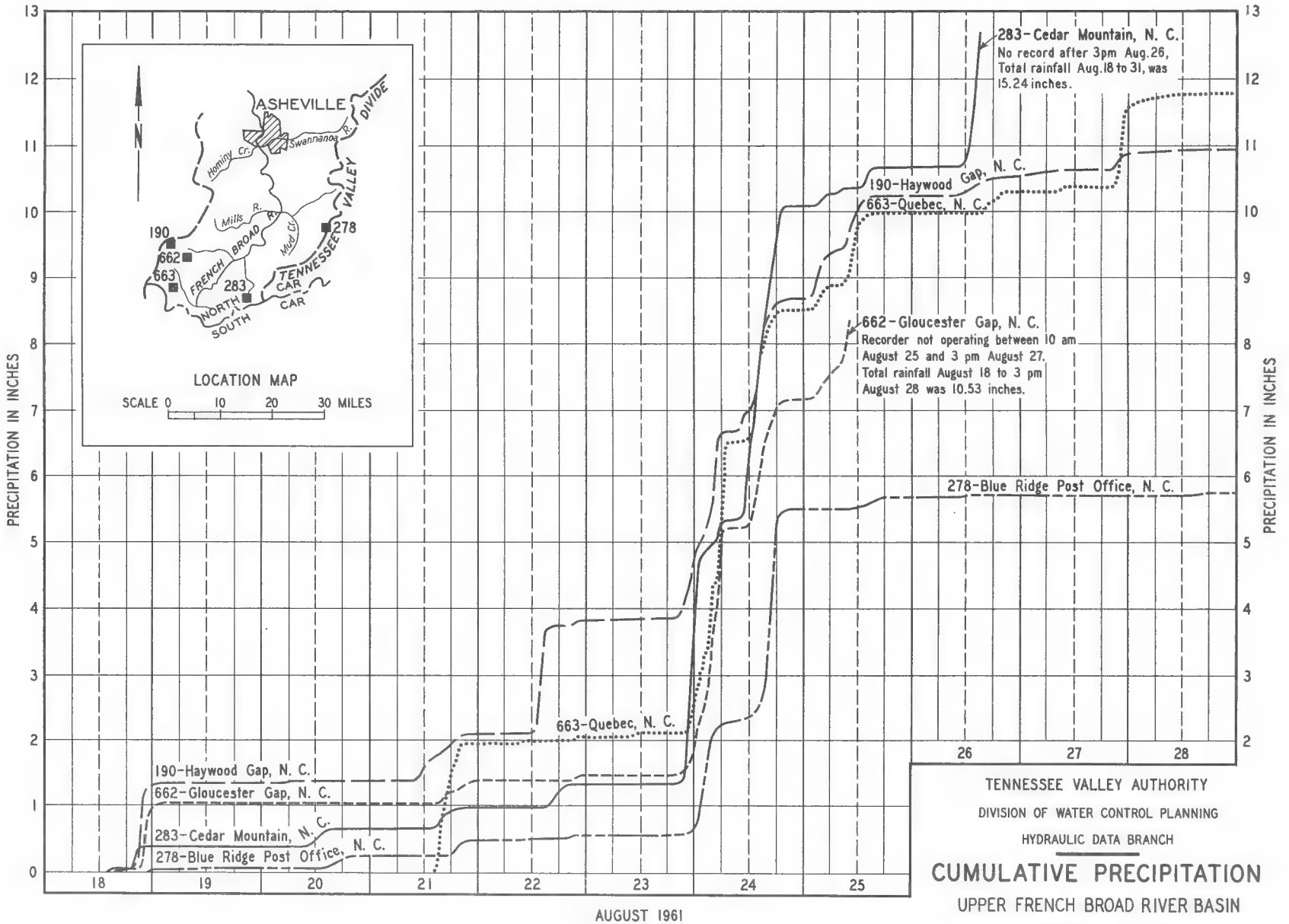
STORM OF AUGUST 24-25, 1961

UPPER FRENCH BROAD RIVER BASIN

Scale 0 2 4 6 8 10 Miles



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DIVISION OF WATER CONTROL PLANNING

HYDRAULIC DATA BRANCH

CUMULATIVE PRECIPITATION

UPPER FRENCH BROAD RIVER BASIN

AUGUST 18-28, 1961

PLATE 3

Hendersonville reported 2.03 inches on the 5th, 2.46 inches on the 10th, and 1.69 inches on the 11th. Rain fell generally again on the 18th and there were showers on August 19, 20, 21, and 22. Plate 1 shows the antecedent rainfall between August 1 and 23. Heavy rains began to fall at all rainfall stations in the basin around 9 or 10 p. m. on August 23. In the period of some 34 hours up to observation time on the morning of August 25, the rainfall averaged 6.7 inches for 17 stations in the French Broad River basin above the mouth of Hominy Creek, an area of 695 square miles. Additional rain fell on the late morning and early afternoon of August 25. Plate 2 shows the distribution of rainfall over the basin for the storm period August 24-25.

Plate 3 shows accumulated precipitation at recording stations in the high rainfall area for the period August 18 to 28. The heaviest rain fell along the Blue Ridge divide in Transylvania and Henderson Counties and at the foot of the ridge near Rosman and Hendersonville. The chart shows that the flood-producing rain fell in three shower periods. The first was from 10 p. m. on August 23 to 6 a. m. on August 24. The second was from noon to 6 p. m. on August 24 and the third from 2 or 3 a. m. to about noon on August 25. Light to heavy showers fell late on August 25 and again on August 26 and 27, serving to keep the streams full and to do further damage to the crops in the fields.

FLOOD RUNOFF

Table 1 shows peak stages and discharges for the flood of August 24-25, 1961, at the river gaging stations in the upper French Broad basin. The table also shows stage and discharge for the highest of the three floods in June, July, and August 1949 and, where known, stage and discharge for the higher of the two floods in August 1940, August 1928, and for the flood of July 1916. Plates 4-7 show stage and discharge hydrographs at four gaging stations on the French Broad River.

Following is the story of the flood on the French Broad River and its tributaries.

French Broad River

On the French Broad River, the August 1961 flood just equaled that of June 1949 at Asheville, was slightly under the June 1949 flood at Rosman and Calvert, but surpassed all the 1949 floods at Blantyre and Bent Creek. The situa-

TABLE 1

FLOOD OF AUGUST 24-25, 1961

PEAK STAGES AND DISCHARGES

Stream and Station	Drainage Area sq. mi.	Aug. 24-25, 1961 Gage Height feet	Aug. 24-25, 1961 Discharge[a] cfs	Other Floods[c] Date	Gage Height feet	Discharge cfs
French Broad River						
Rosman	67.9	8.72	3,260	June 1949	9.49	4,080
				Aug 30, 1940	11.86	9,410
				July 1916	13.9	18,200
Calvert	103	8.5	-	June 1949	8.75	5,190
				Aug 13, 1940	11.66	12,300
				July 1916	13.6	22,000
Blantyre	296	20.01	7,800	July 1949	18.56	8,010
				Aug 14, 1940	21.89	20,800
				July 1916	27.1	50,700
Bent Creek	676	10.86	16,800	Aug 1949	8.00	9,710
				Aug 14, 1940	12.60	23,600
				July 1916	27.3	105,000
Asheville	945	9.01	19,000	June 1949	9.00	20,100
				Aug 30, 1940	12.15	34,800
				July 1916	23.1	110,000
Davidson River						
Brevard	40.4	5.67	2,580	June 1949	8.68	6,800
				Aug 1928	11.80	8,400
Little River						
Penrose	41.4	9.85	2,910	June 1949	8.70	2,450
				Aug 1928	13.4	
				July 1916	13.9	
Mud Creek						
Naples	109	12.60	5,650[b]	Aug 1949	11.52	5,740
				Aug 13, 1940	13.07	10,800
				July 1916	21.5	40,000
Clear Creek						
Hendersonville	42.2	8.97	2,440	Aug 1949	10.50	4,020
				Aug 13, 1940	12.0	
				July 1916	16.0	
Mills River						
Mills River	66.7	8.04	3,330	June 1949	11.22	5,330
				Aug 13, 1940	13.15	11,100
				Aug 30, 1940	13.62	13,400
Cane Creek						
Fletcher	63.1	8.96	3,340	Aug 1949	8.45	2,770
				Aug 30, 1940	9.4	7,200
				July 1916	14.8	23,000

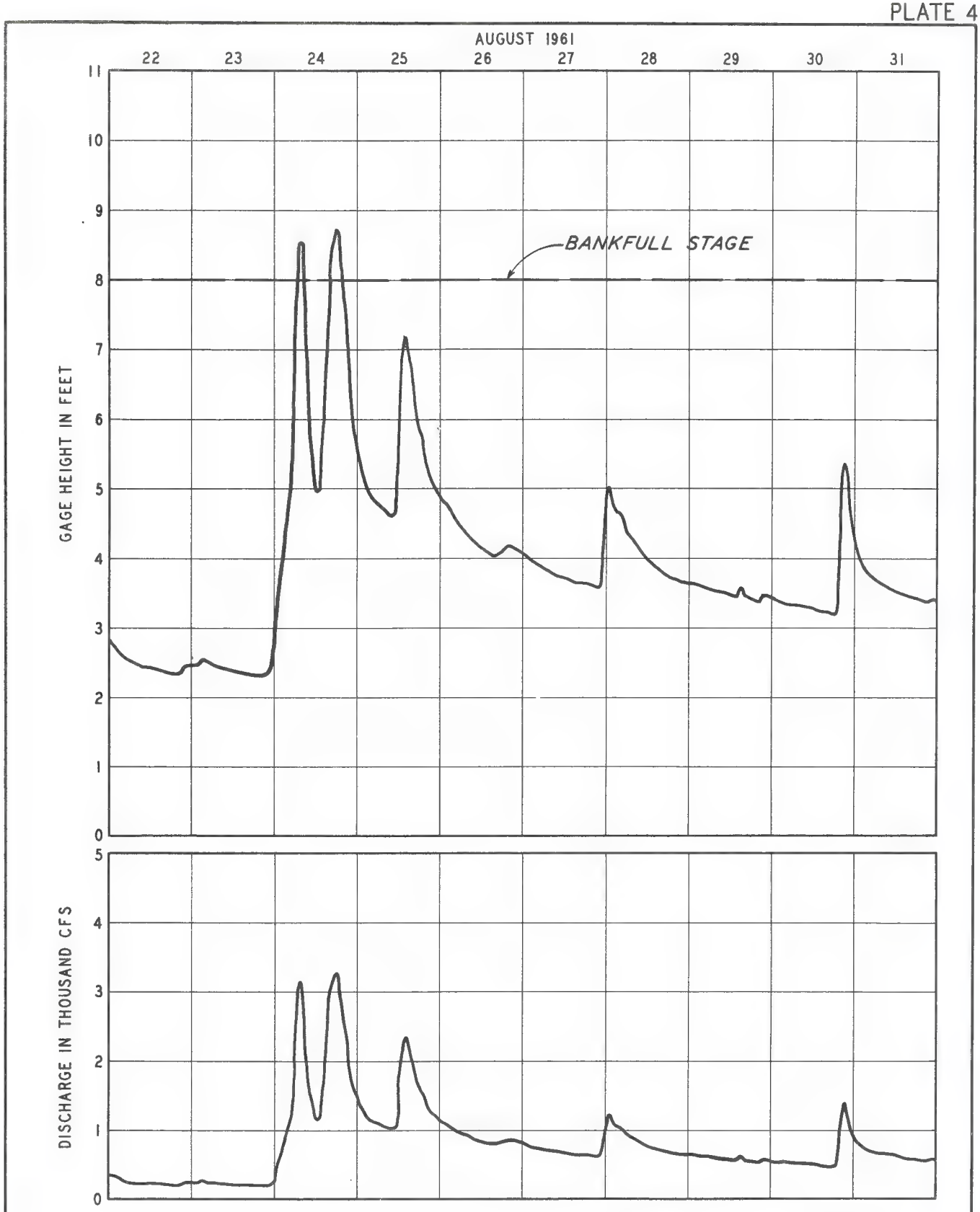
(a) Discharges are provisional.
(b) Discharge measurement.
(c) The first flood listed is the highest of the three 1949 floods at the respective locations.

tion at Blantyre was unusual in that the discharge measured at the peak of the 1961 flood by the U. S. Geological Survey was 7,800 cubic feet per second, slightly less than the discharge which has been published for the flood of July 1949, while the stage was 1.5 feet higher than in July 1949. Industrial wastes which are being discharged into the stream from Davidson River have been settling out in the flat channel of the French Broad, but this material in the channel hardly seems sufficient to produce the change which is indicated. There has been no apparent change in overbank conditions.

Spotty showers in the French Broad headwaters in the period August 18-23 had put the river above normal in the Rosman-Brevard reach. The general intense rains beginning at 9 or 10 p. m. on the 23rd caused the river to rise rapidly to bankfull stage. At Rosman, as shown on Plate 4, the river crested just over bankfull at 7:30 a. m., August 24, then began falling and was back within banks in a few hours. By noon, when another hard general shower began, the river was down to 5 feet, 3 feet below the bankfull stage. This second shower lasted until about 6 p. m. and amounted to 2 inches or more at most stations and as much as 5 inches at Station 283, Cedar Mountain. The river at Rosman again rose rapidly, cresting at 6 p. m. at a stage 0.2 foot higher than the first rise. The river was back within banks again in the late evening and was below a stage of 5 feet in the late morning of August 25 when another general shower produced a third rise, this one stopping a foot below the bankfull stage. The river was back to a 5-foot stage by midnight and continued a slow recession for the next two days.

At Blantyre, with a larger drainage area contributing as shown on Plate 5, the runoff from the first two storm periods produced a smooth rapid rise which began at midnight August 23 with the river at a 6.8-foot stage. By 9 a. m. August 24 the river was at bankfull stage of 14 feet. The river continued rising during the day at a rate of about 0.3 foot per hour and crested at 19.97 feet at 9 a. m. on August 25. The effect of the third shower was to hold the river nearly steady at Blantyre for a 24-hour period and to produce a second crest of 20.01 feet between 2 and 3 a. m. on August 26. The river receded slowly from this crest, as is typical for this reach, and it was noon of August 29 before the river was back within banks. Some additional showers in the headwaters on August 26-28 helped to sustain the high flow. Hence water was over much of the highly productive farmland in the reach from Rosman to Mills River for as much as five days.

The rise at Bent Creek and Asheville was less severe as shown on Plates 6 and 7. Asheville crested at 9.01 feet at 5 p. m. August 25, one foot above bankfull



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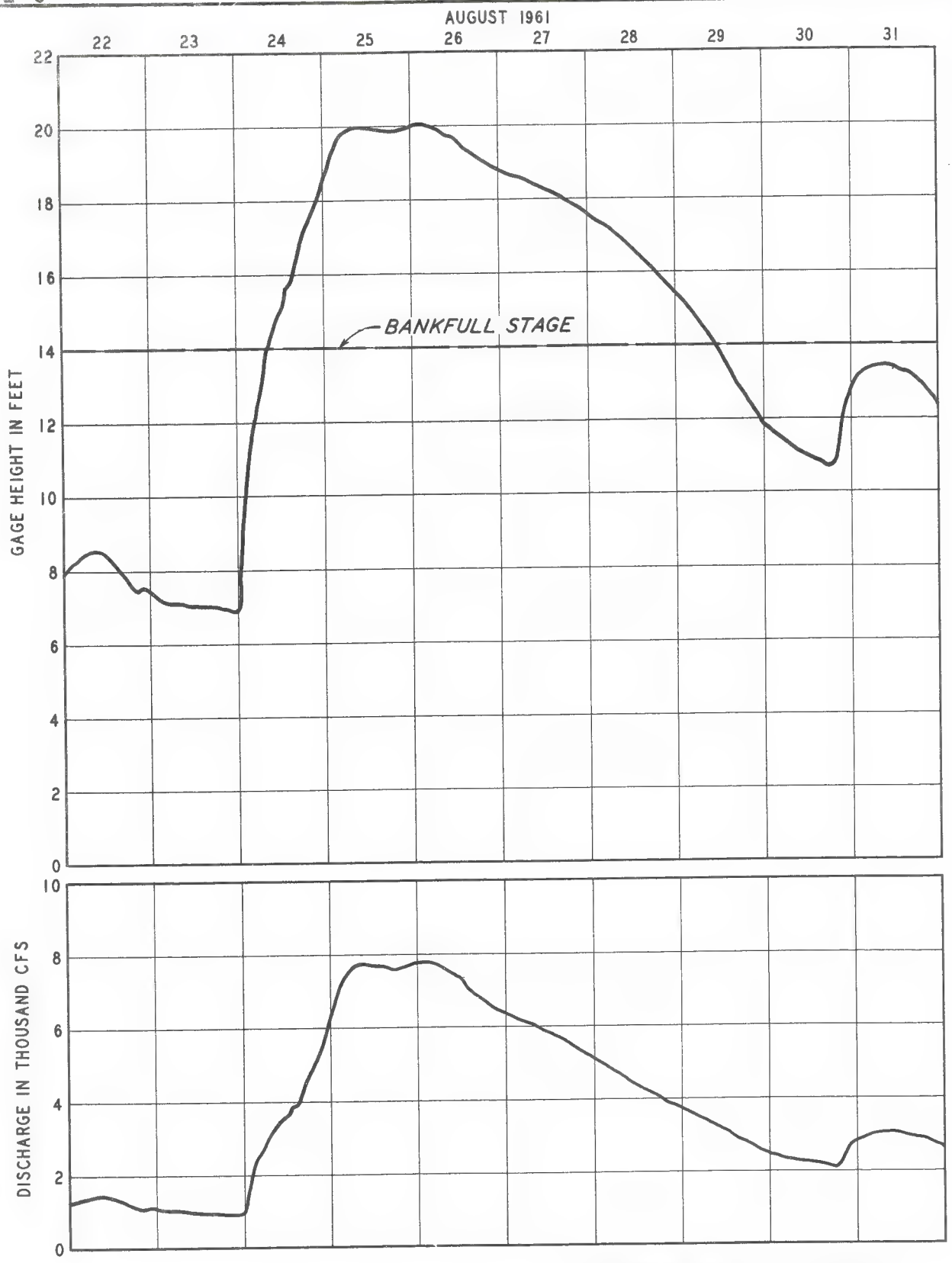
HYDRAULIC DATA BRANCH

FLOOD OF AUGUST 1961
STREAM STAGES AND DISCHARGES
FRENCH BROAD RIVER
AT ROSMAN, N.C.

PLATE 5



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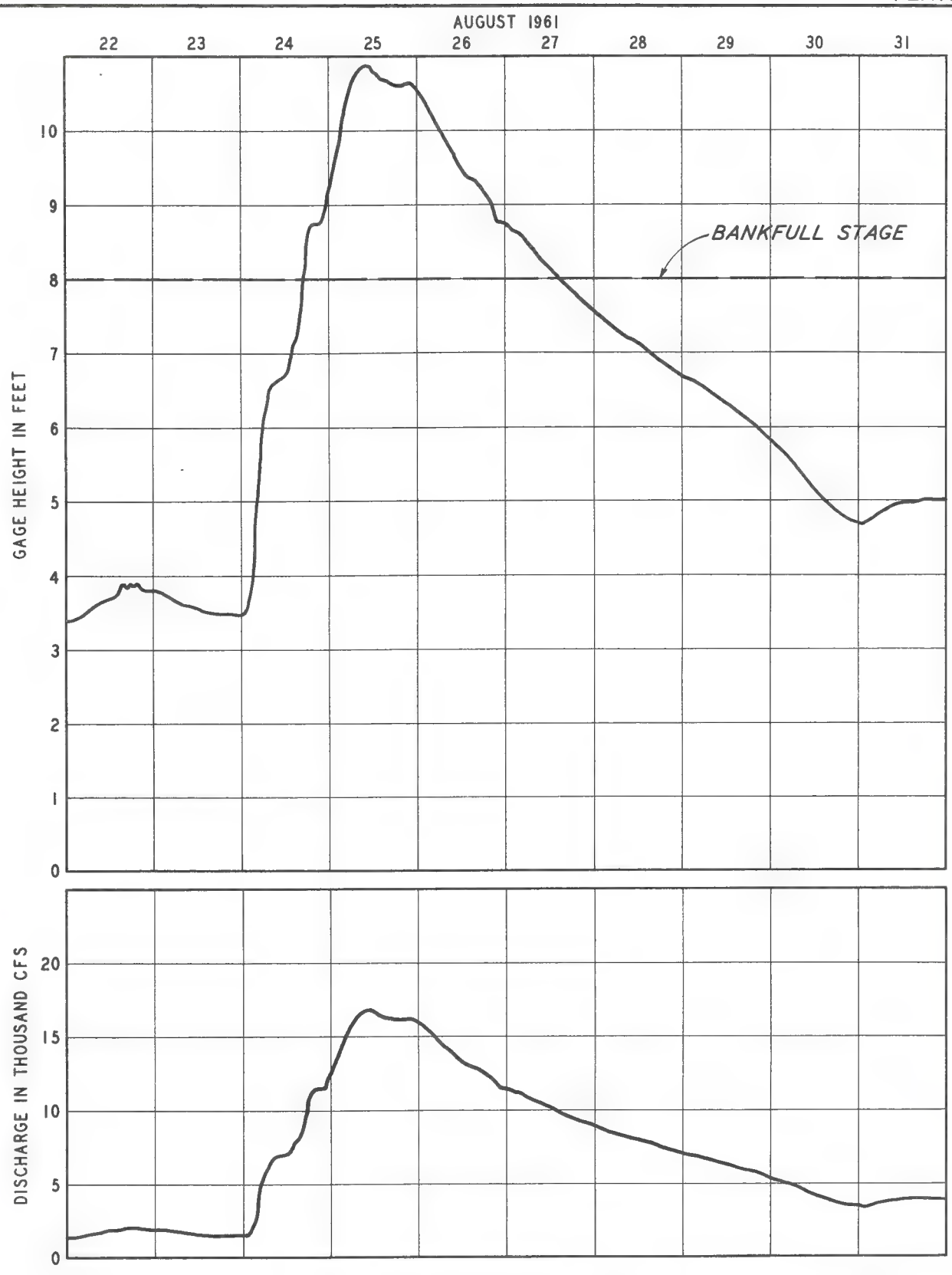
HYDRAULIC DATA BRANCH

FLOOD OF AUGUST 1961
STREAM STAGES AND DISCHARGES
FRENCH BROAD RIVER
AT BLANTYRE, N.C.



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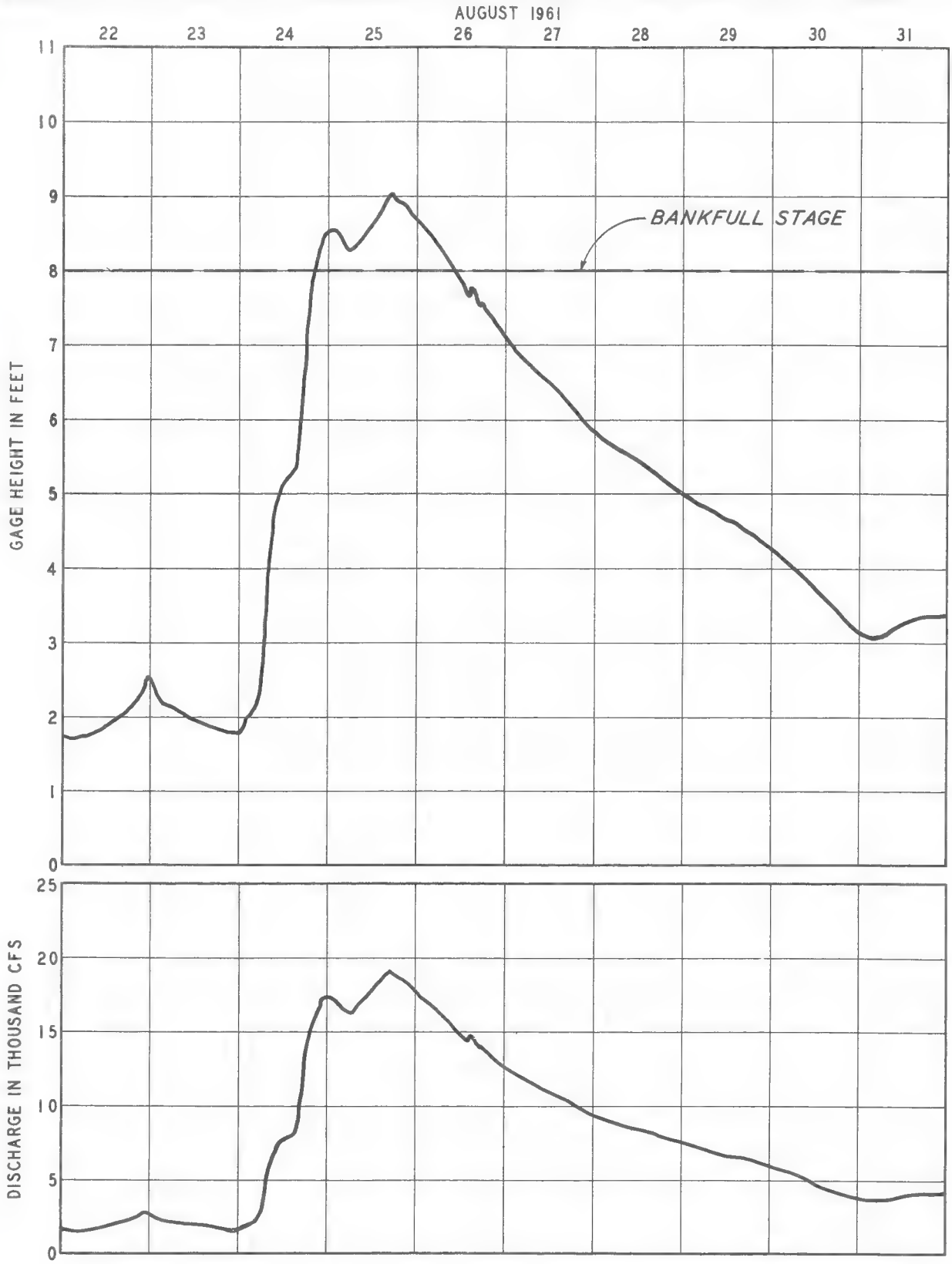
HYDRAULIC DATA BRANCH

FLOOD OF AUGUST 1961
STREAM STAGES AND DISCHARGES
FRENCH BROAD RIVER
AT BENT CREEK, N.C.

PLATE 1



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DIVISION OF WATER CONTROL PLANNING
HYDRAULIC DATA BRANCH

FLOOD OF AUGUST 1961
STREAM STAGES AND DISCHARGES
FRENCH BROAD RIVER
AT ASHEVILLE, N.C.

stage. Low sections of Riverside Drive were flooded and were closed to traffic for a few hours. Water overflowing the lowest land and backing up drains affected to a minor degree 13 concerns located along the river.

In Marshall water covered a part of Blennerhassett Island on which the Marshall School is located. The school was closed on August 25.

Middle Fork of French Broad River was out of banks, overflowing truck crops and regular farm crops near the mouth.

Approaches to main-river bridges were overflowed, stopping traffic. One man lost his life when he attempted to drive his automobile through the flood at Fanning Bridge, west of Fletcher. The automobile was swept off the road and the driver was drowned while trying to swim out. His body was recovered ten days later some 10 miles downstream.

Mud Creek

Mud Creek reached a stage of 12.60 feet at the abandoned gage near Naples, 1.1 foot higher than the crest stage of 11.52 feet in August 1949. Gage height comparisons are not always significant here, however, since at this point the stream follows a dredged channel which is subject to filling and shifting. A measurement of the discharge made by the U. S. Geological Survey at the peak of the flood showed a little less discharge here than in the 1949 flood. The 1961 discharge at this point was only about half that of the flood of August 13, 1940.

Most noteworthy about the flood runoff in the Mud Creek basin was its unusual distribution over the watershed above Naples, due principally to the very heavy rains in the immediate vicinity of Hendersonville. Clear Creek had only a moderate rise in August 1961, cresting at a little more than half of the August 1949 peak discharge. The story was different, however, on Mud Creek through Hendersonville and on the tributaries Bat Fork and Devils Fork near Hendersonville. Level ties were made to high water marks to establish the flood profile on these streams immediately after the flood. These showed that Devils Fork had a rise which was slightly above that of August 13, 1940. Bat Fork was 1 to 2 feet higher than the 1940 flood in the reach near Hendersonville. Mud Creek upstream from Hendersonville did not exceed the October 1959 flood, but from the mouth of Shepherd Creek downstream through Hendersonville the rise exceeded the October 1959 flood by 1 to $1\frac{1}{2}$ feet and was above the heights of the August 13, 1940, and April 5, 1957, floods by 2 feet or more at

most points. Below Hendersonville the 1961 flood dropped in relation to the 1957 flood, and the two floods were about the same at the mouth of Clear Creek.

Although the rise of August 24-25, 1961, on Mud Creek was no higher than a number of floods that have occurred in the past, the flood was one of the most damaging and very possibly the most damaging in history. This was due to the intensive use being made of the bottom lands for the production of high-value truck crops and the increased commercial development which is now located on the flood plain at Hendersonville.

Nearly 6.5 inches of rain falling between 9:30 p. m. August 23 and noon August 24 caused wide overflow of the farm lands along Mud Creek above Hendersonville. By late morning overflow in the low parts of the city had begun. Water overflowing the right bank above the White Street bridge entered shops and businesses along both sides of U. S. Highway 25. Flood gates at Osceola Lake on Shepherd Creek were opened shortly before noon, adding to the flow on that tributary.

Rains let up in the early afternoon and by 3 p. m. the flood was receding at Hendersonville. However, the rain began again at 3 p. m. and continued in a heavy downpour until 8 p. m. The flood again spread out and reached greater depths than before. U. S. Highways 25 and 176 south from Hendersonville became impassable for about 2 hours. The same situation prevailed on U. S. Highway 64 east from downtown Hendersonville, where overflow from Mud Creek, Bat Fork, and Devils Fork ran over the road throughout the night. Some traffic was able to proceed at the height of the flood, particularly trucks with high clearances; but traffic for automobiles was at a standstill. The crest at Hendersonville occurred in the early evening of August 24.

Mud Creek and the tributaries Bat Fork and Devils Fork overflowed wide areas of bottom lands which were planted in corn, hay, and truck crops. Water was over fields below Hendersonville for most of 5 days. Crops were overflowed and roads were washed along Clear Creek, but the flood was less severe there than on the other principal tributaries. The crest was 1.5 feet below that of August 1949 and about equal to the flood of April 1957. Plate 8 shows the extent of overflow in the vicinity of Hendersonville.

Cane Creek

The flood on Cane Creek exceeded the August 1949 flood, the highest in that year, but was far less severe than the flood of August 13, 1940. Above the old Asheville-Hendersonville Airport, water was over fields and roads on August 24 and

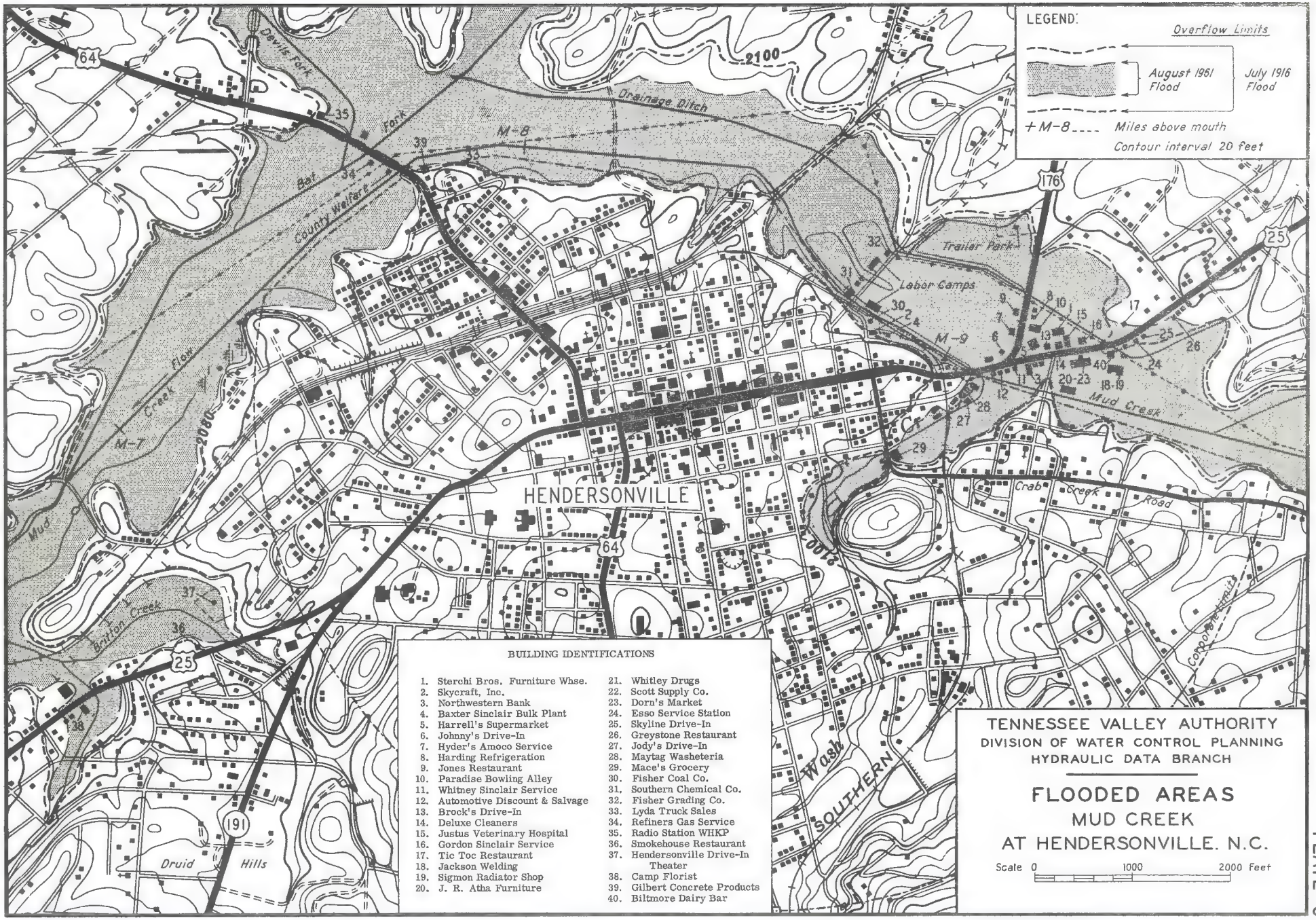
LEGEND:
Overflow Limits
August 1961 Flood
July 1916 Flood
+M-8 ---- Miles above mouth
Contour interval 20 feet
HENDERSONVILLE
Devils Fork
Drainage Ditch
Fork
Bat
County Welfare
Trailer Park
Labor Camps
Mud Creek
Flow
Creek
Mud Cr
Crab Creek Road
Briton Creek
Druid Hills
Wash
SOUTHERN
Cr
M-8
M-9
M-7
2100
2080
2078
64
25
176
191
BUILDING IDENTIFICATIONS
1. Sterchi Bros. Furniture Whse.
2. Skycraft, Inc.
3. Northwestern Bank
4. Baxter Sinclair Bulk Plant
5. Harrell's Supermarket
6. Johnny's Drive-In
7. Hyder's Amoco Service
8. Harding Refrigeration
9. Jones Restaurant
10. Paradise Bowling Alley
11. Whitney Sinclair Service
12. Automotive Discount & Salvage
13. Brock's Drive-In
14. Deluxe Cleaners
15. Justus Veterinary Hospital
16. Gordon Sinclair Service
17. Tic Toc Restaurant
18. Jackson Welding
19. Sigmon Radiator Shop
20. J. R. Atha Furniture
21. Whitley Drugs
22. Scott Supply Co.
23. Dorn's Market
24. Esso Service Station
25. Skyline Drive-In
26. Greystone Restaurant
27. Jody's Drive-In
28. Maytag Washeteria
29. Mace's Grocery
30. Fisher Coal Co.
31. Southern Chemical Co.
32. Fisher Grading Co.
33. Lyda Truck Sales
34. Refiners Gas Service
35. Radio Station WHKP
36. Smokehouse Restaurant
37. Hendersonville Drive-In Theater
38. Camp Florist
39. Gilbert Concrete Products
40. Biltmore Dairy Bar
TENNESSEE VALLEY AUTHORITY
DIVISION OF WATER CONTROL PLANNING
HYDRAULIC DATA BRANCH
FLOODED AREAS
MUD CREEK
AT HENDERSONVILLE, N.C.
Scale 0 1000 2000 Feet

PLATE 8

25 with some truck crops affected. Between U. S. Highway 25 and the mouth, there was broad overflow of corn, hay, and pasture land. Hooper Creek had heavy damage where bush beans in the bottom lands were overflowed.

Right Bank Tributaries

Tributaries on the right bank, those heading against the Blue Ridge, all had sizable floods. Little River was 1. 15 feet higher than in any of the 1949 floods with extensive overflow along the lower 3 miles of the stream. Flash floods occurred on a number of small tributaries on the afternoon and evening of August 24. Typical was Shaw Creek which enters French Broad River near Mile 173. The rise on this stream destroyed one timber bridge and damaged another, and scoured roads and bridge approaches.

Left Bank Tributaries

Davidson River and Mills River did not have significant rises in August 1961, both being well under the 1949 flood stages.

FLOOD DAMAGES

A wet spring had delayed the land preparation and planting for many crops in the upper French Broad area. Frequent showers produced excellent growth as the season progressed but seriously interfered with cultivation and crop treatment. Airplanes are used extensively for crop dusting by the truck crop growers in the basin. Often showers washed the insecticides from the plants as soon as it was applied, so that the costly treatment had to be repeated, often to have the insecticides again wasted. As a result a number of fields, particularly near Rosman, had been abandoned to the weeds with no attempt made to harvest the crop. Pole beans, where the vines were supported, fared much better than did bush beans under the wet conditions. Where the adverse effect of wet grounds was not too great, yields were good to excellent and market conditions were favorable. Harvesting was in full swing when the flood of August 24-25 hit the area.

The flood caused damages totaling $1,380,000 in the upper French Broad River basin. Table 2 summarizes the damages which resulted from the flood. Damage was limited almost entirely to the flood plain of the French Broad River itself, from the headwaters at Rosman to Asheville, and to the tributary streams, Little

TABLE 2

SUMMARY OF DAMAGES, FLOOD OF AUGUST 24-25, 1961

UPPER FRENCH BROAD RIVER BASIN

	Crops		Other		Total	
Agricultural						
French Broad River:						
Transylvania County	$532,450		$ 300		$532,750	
Henderson County	344,800		1,100		345,900	
Buncombe County	4,200		750		4,950	
Totals		$ 881,450		$ 2,150		$ 883,600
Little River		56,300		300		56,600
Mud Creek basin:						
Mud Creek	$114,850		$8,350		$123,200	
Bat Fork	26,900		4,600		31,500	
Devils Fork	47,350		-		47,350	
Clear Creek	25,500		-		25,500	
Totals		214,600		12,950		227,550
Boylston Creek		6,650		-		6,650
Cane Creek		12,000		750		12,750
Total agricultural		$1,171,000		$16,150		$1,187,150
Commercial						
Hendersonville					$ 31,700	
Asheville					4,750	
						36,450
Residential						
Hendersonville						2,450
Municipal						
Hendersonville						5,400
Highway						
Transylvania County					$ 3,200	
Henderson County					20,150	
						23,350
Total tangible damage						$1,254,800
Intangible damage (10%)						125,200
Total, all damage						$1,380,000

River, Mud Creek, Boylston Creek, and Cane Creek. Flood damage was negligible or minor on the other tributaries in this reach, Davidson River, Mills River, Swannanoa River, and Hominy Creek.

Of the total loss due to the flood, 86 percent was to crops in the highly productive area above Asheville. Damage to truck crops and commercial flowers alone exceeded one million dollars. In Hendersonville, where flood waters entered 44 business places and 3 residences and affected streets and drains, losses amounted to $39,550. Of the 44 business places entered, the flood waters did not damage 4 of them. Minor commercial damage occurred in Asheville. Damage to highways was moderate and was most important in the Mud Creek watershed in Henderson County.

The Damage Investigation

A detailed investigation was made of the damages resulting from the flood. Because of the high value of many of the crops concerned and the variable degree of damage, it was imperative that a careful field-by-field survey be made, as was done following the floods of June, July, and August 1949.

Maps were taken into the field on which had been drawn the limit of overflow of the highest of the floods in 1949. The limit of overflow for the 1961 flood was outlined on these maps. A few places were found where conditions were changed somewhat but, in general, the overflow this year followed closely that in 1949. Along the French Broad River the overflow was slightly greater than in July 1949, but followed it closely with minor exceptions from Rosman through the lower limit of the broad flood plain reach just below the mouth of Mills River. From that point to Asheville where the river is steeper and the flood plain is narrow, the limit of overflow is essentially the same in all large floods. On Mills River there was negligible overbank flow in the 1961 flood, and the broad flood plain below North Carolina Highway 191 was free of overflow except that due to the French Broad River near the Mills River mouth. Along Mud Creek and its tributaries, with the exception of Clear Creek, overflow was greater than in August 1949. Clear Creek had somewhat less overflow this year than in 1949. On Little River the overflow was slightly greater but closely followed that of July 1949. On Cane Creek the overflow was spotty in the upper end and extensive and general on the lower reaches, as was the case in August 1949. Hooper Creek, a tributary of Cane Creek, had considerable overflow this time.

The large truck crop planters were interviewed. These provided the location of plantings where losses had occurred, together with data on the condition

of the crop before the flood, the extent of harvest, and other factors affecting the loss. The plantings were then located in the field, outlined on the maps, and an assessment of the damages was made.

Fifteen produce firms were found to be operating in the area this year, most with their headquarters at or near Hendersonville. These were the following:

C. L. Brannon, Brevard
M. E. Brown, Edneyville
Frank Burgin, Brevard
Bert Cantrell Produce, Hendersonville
Cantrell and Johnson Produce, Hendersonville
Cornelius Farms, Hendersonville
Cornelius and Branch, Edneyville
Paul Dunlap, Mountain Home
Johnson Farms, Hendersonville
W. L. Justice, Edneyville
Long Produce, Inc., Hendersonville
J. C. Powell, Hendersonville
Stallings Brothers, Brevard
J. H. Stepp and Sons, Dana
Thomas Produce Co., Hendersonville

The produce firms did not operate on a share-crop basis this year, as some did in 1949, where the farmer provided the land and cultivated the crop and shared in the produce income. Stallings Brothers operated on land they owned, for the most part. Others rented most of the land for their operations.

A number of planters were heavy losers in the flood. Bert Cantrell Produce had 225 acres of potatoes and 165 acres of bush beans flooded. Their plantings were located on French Broad River near Etowah, near Horseshoe, and at the mouth of Mills River.

Cornelius Farms lost 154 acres of pole beans, 20 acres of bush beans, and 20 acres of cucumbers from plantings along French Broad River near Brevard, Penrose, Pisgah Forest, and at the mouth of Cane Creek, and on Devils Fork and Clear Creek.

Stallings Brothers lost 220 acres of potatoes and 22 acres of pole beans at their farm on French Broad River at Island Home Bridge near Brevard and at land rented about five miles downstream.

C. L. Brannon had damage on 255 acres of bush beans along French Broad River from Calvert to Horseshoe.

Thomas Produce Company lost 35 acres of potatoes, 30 acres of pole beans, 38 acres of bush beans, and 4 acres of cucumbers on Mud Creek and Bat

Fork near Hendersonville. They also had heavy damage to trucks, tractors, and ditches and dikes.

Paul Dunlap lost 89 acres of bush beans and 40 acres of potatoes on Mud Creek at Mountain Home, near Hendersonville.

Yields and Unit Values--Table 3 lists the basic data used in computing the crop losses. These include the average yield for each crop, the net value per unit which is the average market value less the picking and marketing cost, the net loss per acre, and the loss to pickers per acre. The figures used are based upon data obtained from the planters, county agricultural agents, and market reporting agencies. In most instances the values for net loss per acre are quite close to those used for the 1949 floods. Succeeding paragraphs discuss various crops and give the basis for the figures used where these vary appreciably from the 1949 values.

Loss of income to pickers was estimated for all the regular truck crops. The majority of these pickers are migratory workers who are provided to the growers by a contractor, who in turn furnishes living quarters and transportation for the workers and usually hauls the harvest to market or to the grading and packing sheds. Contract rate for bush and pole beans this year was 75 cents per bushel, about ten cents above the 1949 rate.

Bush bean yields were averaging about 150 bushels per acre and selling for an average of about $2.50 at the time of the flood, or $1.75 per bushel before picking. Wet grounds had seriously interfered with cultivating at many places and the frequent rains made it necessary to repeat crop dusting more than usual this year. Some fields where drainage was poor had serious blight problems. Other fields with better drainage were producing unusually high yields.

Pole beans were having excellent yields but weed control was a big problem in many places. Market prices ranged from $2.50 to $5 or more per bushel for the better quality with an average of about $3.50. Table A-3, in Appendix A, shows the tremendous increase in pole bean production over 1949, 479 acres this year against 13 acres in the flood area in 1949. Where a partial harvest had been made, damage figures were reduced to compensate.

Potatoes have shown a very large increase since 1949, when they were tried in quantity for the first time. In 1961 the acreage was more than three times the 1949 figure, 741 acres against 215 acres in the flood area. Variety and method changes are now producing higher yields, 200 bags of 100 pounds each compared with

TABLE 3

UNIT VALUES FOR FLOOD DAMAGE COMPUTATION

Crop	Average Yield per Acre	Net Value	Net Loss per Acre	Picker Loss per Acre
Bush beans	150 bu.	$ 1.75/bu.	$ 260	$130
Pole beans	250 bu.	2.75/bu.	685	190
Potatoes	200 bags	2.50/bag	500	30
Cabbage	280 bags	0.70/bag	200	30
Cabbage plants	200 m	2.50/m	500	
Cucumbers	250 bu.	1.50/bu.	375	50
Squash	200 bu.	2.00/bu.	400	50
Carrots	10 tons	25.00/ton	250	25
Eggplant	400 hampers	1.25/h.	500	30
Peppers	250 hampers	1.25/h.	300	30
Tomatoes			500	50
Sweet corn	75 bags	1.60/bag	120	20
Corn	80 bu.	1.00/bu.	80	
Tobacco			1,000	
Pasture, hay (loss of use, reduction of yield)			10	
Soybeans (silage)			80	
Lespedeza			20	
Millet			50	
Gladioli (loss of flowers)			1,500	

150 bags in 1949. Under normal conditions potatoes would have been harvested before late August, but a wet spring put planting behind by several weeks to a month or more. As a result the harvest was just beginning when the flood came along.

Cabbage yields and prices were about the same as in 1949. One grower lost a field of cabbage plants which he was raising for the Florida winter crop season. Such plantings yield about 200,000 plants per acre at a net value of $2.50 per thousand.

Cucumbers were selling for $1.50 to as much as $3.50 per bushel. Plantings in the flood plain were three times that of 1949, 138 acres against 43 acres.

Carrots are a new crop since 1949. These are being raised now on contract for the Gerber Products Company plant. Ten acres were affected by the flood,

with yields about 10 tons to the acre and a net value of $25 per ton. Tomatoes are being produced under a similar arrangement. Two acres were affected by the flood.

Sweet corn plantings were down from 1949, 28 acres in the flood area against 110 acres in the earlier flood. Market prices were a little higher than in 1949.

The commercial growing of gladioli has continued to flourish and expand in the upper French Broad River basin. Six growers are in quantity production now: Tate Flowers, Foster Farms, and Flower Express of Hendersonville; and Gordon Bradley, Thomas Farms, and Wallace Farms of Brevard. The three Hendersonville firms had a total of about 300 acres planted near Mills River. Thomas Farms had almost 200 acres near Pisgah Forest. In all some 132 acres of gladioli were affected by the flood this year, compared with about 30 acres in 1949. The growers have found that they can plant their bulbs more densely now, 50,000 to 60,000 bulbs per acre compared with about 30,000 in 1949, with resultant higher yields in cut flowers. They also get full-size flowers here from smaller bulbs than is the case elsewhere in the summer season or in the Florida winter growing season. Land rental, cost of hand planting of the bulbs, and cultivation is running about $1,000 per acre under the present operations. They can expect to cut about 4,000 dozen flowers per acre, selling at the shed at prices which range all the way from 15 cents to one dollar per dozen depending upon grade and color, with the average about 50 cents per dozen. Gross income averages about $2,000 per acre and may be twice that under the most favorable conditions. Loss of bulbs did not appear to be a factor in this flood, as it was in the repeated overflows that occurred in 1949. Net loss has been figured at $1,500 per acre with adjustment for any harvesting that had taken place.

Among the ordinary farm crops, the complete loss of corn was figured at $80 per acre, based upon an average yield of 80 bushels per acre and a net value of $1 per bushel. Corn was nearly matured and full losses were given only in the relatively few cases where water was over the ears long enough to ruin the corn for sale or silage use. In most cases the loss was considered to be only a fraction of the $80 value, based upon a lowering of yield or grade. Fields on many of the tributaries had water to shallow depths for relatively short periods and did not appear to be damaged appreciably. Loss of soybeans produced for silage was figured at $80 per acre. Millet and lespedeza were figured at $50 and $20 per acre, respectively. Overflow and mud deposits on pastures and hay fields was figured at $10 per acre loss.

Other Damage--Damages to highways and bridges were furnished by the North Carolina State Highway Department and in most cases were taken directly from cost records. Adjustments were made where bridge replacements involved a better bridge than was in place before the flood.

Commercial and residential damage in Hendersonville and Asheville was obtained by contact at each point of damage. In making an allowance for loss of business, gross figures only were obtained in most cases. Net loss of business was taken to be 33 percent of gross for eating establishments and 25 percent of gross for other types of businesses.

Description of Damages

Truck Crops--Table A-1, in Appendix A, summarizes truck crop damages by counties and crops, gives the acreages affected, and the loss subdivided for the planters and for pickers. Truck crops affected aggregated 2,652 acres in the flood. Total loss to the planters is estimated at $774,900 and to the pickers $168,350, for a total tangible loss of $943,250.

The loss to truck crops could easily have been higher. Some fields of bush beans that were flooded could not be listed as damaged by the flood since the wet weather during the season had caused large losses before the advent of the flood. These fields had been planted and dusted once or twice but, because of the wet ground, they could not be cultivated and had been abandoned to the weeds without a single bean being harvested. Two hundred acres planted by J. C. Powell near the mouth of Middle Fork of French Broad were thus lost. Similar cases, involving smaller fields, were found elsewhere.

Table A-2, in Appendix A, recapitulates crop losses for the flood area by type of crop, and Table A-3 compares losses to crops and acreages affected in the 1961 flood with those for the June 1949 flood. The largest single item of loss was to potatoes, with 741 acres affected. The loss was estimated at a total of $377,550, divided $356,000 to planters and $21,550 to pickers. Wet ground was causing some blight in potatoes but it was the consensus of planters that they would have probably made a good yield had it not been for the flood. One field of 165 acres owned by Stallings Brothers near Brevard had 150 acres covered by the flood. After the flood when harvesting was attempted, the entire 150 acres which had been flooded was found to have rotted in the ground. The 15 acres not flooded produced good potatoes.

Bush beans made up the next largest item of loss and involved the largest acreage, 1,168 acres. Loss to planters was $183,300, loss to pickers was $91,350, and total loss was $274,650. Pole beans, with their higher unit value, accounted for almost as much loss, $222,800 total, divided $174,500 for planters and $48,300 for pickers on the 479 acres which were affected. Harvesting had begun on some fields of bush beans and pole beans and the unit losses were adjusted where this had occurred.

Cucumbers produced the next largest item of loss, with $41,700 damage on 138 acres. Loss on 46 acres of cabbage was $8,800 and on 16 acres in cabbage plants for transplanting was $6,000. Peppers on 17 acres accounted for a loss of $5,500. The loss on 28 acres in sweet corn was estimated at $3,850. Losses on squash, carrots, eggplant, and tomatoes amounted to less than $1,000 each.

Other Crops--Despite the emphasis on truck crop production, the larger part of the cultivated land in the French Broad River basin is still used for the usual farm crops, corn, hay or pasture, and small grains. The total acreage of these crops affected by the flood was 5,822 acres, a little more than two times that in truck crops this year. Total loss to these crops amounted to $104,300, 15 percent of that of truck crops.

The corn acreage involved was 2,814 acres and the loss amounted to $65,200. Pasture and hay land amounted to 2,643 acres and damage was $24,900. Soybeans, lespedeza, and millet constituted the small grains. These totaled 362 acres, with the damage estimated at $13,450.

Gladioli, although involving only 132 acres, had damages which totaled $123,450, the largest per acre of that for all the regular farm crops. A 70-acre field on the left bank of French Broad River near the mouth of Mills River had 50 acres overflowed for the largest gladioli damage, $75,000. Near the mouth of Little River 50 acres was overflowed with severe damage to 20 acres. Other losses to gladioli plantings occurred near Island Ford Bridge, at Blantyre, and at Kings Bridge, all along the French Broad River.

Commercial--In Hendersonville flood waters affected some 44 business establishments, damaging 40 with the total damage estimated at $31,700. Nine of thirteen affected firms in Asheville had total damages estimated at $4,750. Plate 8 shows the extent of overflow at Hendersonville and shows the principal points of damage.

The damage in Hendersonville occurred south of the main business district along U. S. Highways 25 and 176 and along Old Spartanburg Highway, to the east along

U. S. Highway 64 and to the north along U. S. Highway 25. The larger part of the loss was to the businesses and service shops which are located on the right-bank flood plain of Mud Creek near the intersection of U. S. Highways 25 and 176, where an extensive development has taken place in recent years. In this immediate area, buildings which were affected included a furniture warehouse, a bank branch, a bowling alley, six restaurants or drive-in eating places, four service stations, two auto parts firms, two super markets, two furniture stores, a drugstore, a veterinary hospital, a dry cleaner, a welding shop, a radiator shop, and a refrigeration shop. A number of other businesses narrowly escaped damage when the rising waters stopped at their doors. One drive-in had water 18 inches deep on the floor, damaging food stock and equipment and causing two days' loss of business. The welding firm had a large stock of welding supplies and fabricating metal flooded, involving a heavy expense for cleaning up and a loss of grade due to rust. One auto parts firm had 200 junked automobiles flooded. The furniture warehouse had varying degrees of damage on 200 items of furniture reached by the water. Water was 4.5 feet deep in the warehouse, but the furniture is habitually stored 3 feet above the floor on wood platforms because of the flood danger. At the bowling alley water was in the lobby but lacked several feet of reaching the alleys, which would sustain severe damage if flooded.

On the left bank at U. S. Highway 25 a drive-in, a grocery store, and a self-service laundry were flooded. Three small businesses were affected on the Old Spartanburg Highway where it crosses the Mud Creek flood plain. At a bulk oil plant nearby there was damage to pumps, motors, and stock. This is the first place affected by floods in the Hendersonville vicinity and is often the only place damaged. The water this time was over a warehouse floor for the first time since it was built in 1927, according to the owner. Water which was over U. S. Highway 64 where it crosses Mud Creek, Bat Fork, and Devils Fork flooded a service station and was 6 inches deep in the studio and offices of radio station WHKP, causing the station to be off the air for 12 hours of its regular broadcast time. Water at that depth did only minor damage but the damage would have been much higher with deeper flooding.

Flood waters from Britton Creek overflowed U. S. Highway 25 at two points in the Druid Hills section at the north side of Hendersonville. At a drive-in theater, gravel was washed from the parking lot and water was 6 inches deep in the projection booth. A greenhouse had water 1.3 feet deep with a heavy loss of plants and damage to the heating plant and other equipment.

In Asheville water backing into a basement damaged stored hides. Junked automobiles were affected at two points, and coal in storage was damaged in two yards.

Water on the grounds forced 2-day shutdowns at 2 businesses, and at a by-products plant water in the boiler house damaged equipment and caused a 4-day shutdown.

Residential--In Hendersonville high waters made it necessary to evacuate 30 families from each of 2 migrant labor camps in the Mud Creek bottom at Old Spartanburg Highway. Damage to personal belongings of the workers is estimated at $600. At a trailer park at the edge of the flood plain at U. S. Highway 176, water entered an apartment and two trailers. Nine other trailers had minor damage from water which surrounded them. Water from Wash Creek flooded basements at three houses on First Avenue and one on Allen Street, damaging heating plants and stored furniture. Britton Creek damaged a retaining wall and flooded a basement in Druid Hills.

Municipal--Small bridges, culverts, and drains were damaged by Mud Creek tributaries in Hendersonville to an estimated $5,400.

Highways--Highway damage in Transylvania County amounted to $3,200, all to bridges and culverts and their approaches. Involved were three small bridges on Middle Fork French Broad and a culvert in the Little River basin.

Damage in Henderson County amounted to $20,150. Affected were six bridges and two culverts, mostly in the Mud Creek basin. One bridge on Bat Fork and one on Shaw Creek had to be replaced.

Intangible Damages--Ten percent has been added to the total tangible damage for the flood to cover intangible damages. For the truck crop industry there was loss of income to produce haulers and to workers in the produce plants, and loss of revenue to contractors who provide pickers for the crops and to crop dusting agencies. The latter receive a substantial payment per acre for dusting and side-dressing truck crops by airplane. Produce was reduced in grade by delays in harvesting caused by the flood. There were losses throughout the flood area due to transportation interruptions which resulted from the flood.

APPENDICES

APPENDIX A

TABLE A-1

SUMMARY OF CROP DAMAGES, FLOOD OF AUGUST 24-25, 1961

UPPER FRENCH BROAD RIVER BASIN

Crop	Total Acreage Affected	Loss Sustained by Planters	Pickers	Farmers	Total Loss
French Broad River					
Transylvania County:					
Truck crops					
Bush beans	365	$ 46,800	$23,400		$ 70,200
Pole beans	244	63,950	17,700		81,650
Potatoes	565	281,250	16,900		298,150
Cucumbers	36	12,350	1,650		14,000
Squash	4	100			100
Carrots	6	100			100
Tomatoes	1	500	50		550
Totals, truck crops	1,221	$405,050	$ 59,700		$464,750
Farm crops					
Corn	1,206			$19,650	$ 19,650
Hay, pasture	1,502			15,000	15,000
Soybeans	5			50	50
Lespedeza	70			1,050	1,050
Totals, farm crops	2,783			$35,750	35,750
Gladioli	59	31,950			31,950
Totals, all crops	4,063	$437,000	$ 59,700	$35,750	$532,450
Henderson County:					
Truck crops					
Bush beans	290	$ 63,700	$31,850		$ 95,550
Pole beans	95	44,800	12,400		57,200
Potatoes	69	32,250	2,100		34,350
Cucumbers	76	19,350	2,600		21,950
Peppers	12	3,600	350		3,950
Totals, truck crops	542	$163,700	$ 49,300		$213,000

TABLE A-1 (Continued)

Crop	Total Acreage Affected		Loss Sustained by Planters	Pickers	Farmers		Total Loss	
(Brought forward)		542	$163,700	$ 49,300				$213,000
Farm crops								
Corn	809				$33,950		$ 33,950	
Hay, pasture	494				3,600		3,600	
Soybeans, silage	80				6,350		6,350	
Lespedeza	30				500		500	
Millet	28				1,900		1,900	
Totals, farm crops		1,441				$46,300		46,300
Gladioli		57	85,500					85,500
Totals, all crops		2,040	$249,200	$ 49,300		$46,300		$344,800
Buncombe County:								
Truck crops								
Bush beans	2		$ 600				$ 600	
Cabbage	2		200				200	
Cucumbers	0.5		50				50	
Squash	1		300				300	
Carrots	1		200				200	
Peppers	1		200				200	
Tomatoes	1		300				300	
Totals, truck crops		8		$ 1,850				$ 1,850
Farm crops								
Corn	125				$ 1,850		$ 1,850	
Hay, pasture	20				200		200	
Lespedeza	37				300		300	
Totals, farm crops		182				$ 2,350		2,350
Totals, all crops		190	$ 1,850			$ 2,350		$ 4,200
TOTALS--FRENCH BROAD RIVER		6,293	$688,050	$109,000		$84,400		$881,450

TABLE A-1 (Continued)

Crop	Total Acreage Affected	Loss Sustained by Planters	Pickers	Farmers	Total Loss
Little River, Transylvania County:					
Truck crops					
Bush beans	25	$ 6,500	$ 3,250		$ 9,750
Pole beans	26	17,100	4,800		21,900
Potatoes	30	15,000	900		15,900
Cabbage	5	1,000	150		1,150
Cabbage plants	8	2,000			2,000
Cucumbers	10	950	100		1,050
Totals, truck crops	104	$ 42,550	$ 9,200		$ 51,750
Farm crops					
Corn	179			$ 2,150	$ 2,150
Tobacco	2			350	350
Hay, pasture	163			1,650	1,650
Soybeans	10			400	400
Totals, farm crops	354			$ 4,550	4,550
TOTALS--LITTLE RIVER	458	$ 42,550	$ 9,200	$ 4,550	$ 56,300
Mud Creek basin, Henderson County:					
Mud Creek					
Truck crops					
Bush beans	223	$ 34,600	$17,300		$ 51,900
Pole beans	41	15,200	4,250		19,450
Potatoes	45	17,500	1,050		18,550
Cabbage plants	8	4,000			4,000
Cucumbers	7	2,600	350		2,950
Peppers	4	1,200	150		1,350
Sweet corn	27	3,250	550		3,800
Totals, truck crops	355	$ 78,350	$ 23,650		$102,000
Farm crops					
Corn	397			$ 6,700	$ 6,700
Hay, pasture	336			3,350	3,350
Soybeans	14			1,100	1,100
Lespedeza	85			1,700	1,700
Totals, farm crops	832			$12,850	12,850
Totals, all crops	1,187	$ 78,350	$ 23,650	$12,850	$114,850

TABLE A-1 (Continued)

Crop	Total Acreage Affected		Loss Sustained by Planters		Pickers		Farmers		Total Loss	
Bat Fork										
Truck crops										
Bush beans	54		$ 4,150		$ 2,100				$ 6,250	
Pole beans	16		5,500		1,500				7,000	
Potatoes	32		10,000		600				10,600	
Cabbage	6		600		100				700	
Cucumbers	9		1,500		200				1,700	
Totals, truck crops		117		$ 21,750		$ 4,500				$ 26,250
Farm crops										
Corn	45						$ 250		$ 250	
Hay, pasture	39						400		400	
Totals, farm crops		84						$ 650		650
Totals, all crops		201		$ 21,750		$ 4,500		$ 650		$ 26,900
Devils Fork										
Truck crops										
Bush beans	80		$ 18,750		$ 9,350				$ 28,100	
Pole beans	15		9,200		2,500				11,700	
Cabbage	33		5,900		850				6,750	
Squash	1		150		50				200	
Sweet corn	1		50						50	
Totals, truck crops		130		$ 34,050		$ 12,750				$ 46,800
Farm crops										
Corn	12						$ 250		$ 250	
Hay, pasture	36						300		300	
Totals, farm crops		48						$ 550		550
Totals, all crops		178		$ 34,050		$ 12,750		$ 550		$ 47,350
Clear Creek										
Truck crops										
Bush beans	3		$ 800		$ 400				$ 1,200	
Pole beans	42		18,750		5,150				23,900	
Eggplant	1		300						300	
Totals, truck crops		46		$ 19,850		$ 5,550				$ 25,400

TABLE A-1 (Concluded)

Crop	Total Acreage Affected	Loss Sustained by Planters	Pickers	Farmers	Total Loss
(Brought forward)	46	$ 19,850	$ 5,550		$ 25,400
Farm crops					
Soybeans	3			$ 100	100
Totals, all crops	49	$ 19,850	$ 5,550	$ 100	$ 25,500
TOTALS--MUD CREEK BASIN	1,615	$154,000	$ 46,450	$14,150	$214,600
Boylston Creek, Henderson County:					
Farm crops					
Corn	41			$ 400	$ 400
Tobacco	0.5			250	250
Hay, pasture	12				
Totals, farm crops	54			$ 650	$ 650
Gladioli	16	$ 6,000			6,000
TOTALS--BOYLSTON CREEK	70	$ 6,000		$ 650	$ 6,650
Cane Creek, Henderson County:					
Truck crops					
Bush beans	126	$ 7,400	$ 3,700		$ 11,100
Carrots	3	350			350
Totals, truck crops	129	$ 7,750	$ 3,700		$ 11,450
Farm crops					
Tobacco	0.2			$ 150	$ 150
Hay, pasture	41			400	400
Totals, farm crops	41			$ 550	550
TOTALS--CANE CREEK	170	$ 7,750	$ 3,700	$ 550	$ 12,000
GRAND TOTALS	8,606	$898,350	$168,350	$104,300	$1,171,000

TABLE A-1 (Concluded)

Crop	Total Acreage Affected	Loss Sustained by Planters	Pickers	Farmers	Total Loss
(Brought forward)	46	$ 19,850	$ 5,550		$ 25,400
Farm crops					
Soybeans	3			$ 100	100
Totals, all crops	49	$ 19,850	$ 5,550	$ 100	$ 25,500
TOTALS--MUD CREEK BASIN	1,615	$154,000	$ 46,450	$14,150	$214,600
Boylston Creek, Henderson County:					
Farm crops					
Corn	41			$ 400	$ 400
Tobacco	0.5			250	250
Hay, pasture	12				
Totals, farm crops	54			$ 650	$ 650
Gladioli	16	$ 6,000			6,000
TOTALS--BOYLSTON CREEK	70	$ 6,000		$ 650	$ 6,650
Cane Creek, Henderson County:					
Truck crops					
Bush beans	126	$ 7,400	$ 3,700		$ 11,100
Carrots	3	350			350
Totals, truck crops	129	$ 7,750	$ 3,700		$ 11,450
Farm crops					
Tobacco	0.2			$ 150	$ 150
Hay, pasture	41			400	400
Totals, farm crops	41			$ 550	550
TOTALS--CANE CREEK	170	$ 7,750	$ 3,700	$ 550	$ 12,000
GRAND TOTALS	8,606	$898,350	$168,350	$104,300	$1,171,000

TABLE A-2

RECAPITULATION OF CROP DAMAGES--FLOOD OF AUGUST 24-25, 1961

UPPER FRENCH BROAD RIVER BASIN

Crop	Total Acreage Affected		Loss Sustained by Planters	Pickers	Farmers	Total Loss	
Truck crops							
Bush beans	1,168		$183,300	$ 91,350		$274,650	
Pole beans	479		174,500	48,300		222,800	
Potatoes	741		356,000	21,550		377,550	
Cabbage	46		7,700	1,100		8,800	
Cabbage plants	16		6,000			6,000	
Cucumbers	138		36,800	4,900		41,700	
Squash	6		550	50		600	
Carrots	10		650			650	
Eggplant	1		300			300	
Peppers	17		5,000	500		5,500	
Tomatoes	2		800	50		850	
Sweet corn	28		3,300	550		3,850	
Totals, truck crops		2,652	$774,900	$168,350			$ 943,250
Gladioli		132	123,450				123,450
Other crops							
Corn	2,814				$ 65,200	$ 65,200	
Tobacco	3				750	750	
Pasture, hay	2,643				24,900	24,900	
Soybeans	112				8,000	8,000	
Lespedeza	222				3,550	3,550	
Millet	28				1,900	1,900	
Totals, other crops		5,822			$104,300		104,300
Totals, all crops		8,606	$898,350	$168,350	$104,300		$1,171,000

TABLE A-3

COMPARISON OF CROP LOSSES

JUNE 1949 AND AUGUST 1961

UPPER FRENCH BROAD RIVER BASIN

Crop	Year	Acreage Affected	Loss Sustained by			Total Loss
			Planters	Pickers	Farmers	
Bush beans	1949	1018	$126,500	$ 37,500	$ 54,200	$ 218,200
	1961	1168	183,300	91,350		274,650
Pole beans	1949	13	1,500	1,000	100	2,600
	1961	479	174,500	48,300		222,800
Potatoes	1949	215	30,600	6,500	14,400	51,500
	1961	741	356,000	21,550		377,550
Cucumbers	1949	43	8,000	1,600	600	10,200
	1961	138	36,800	4,900		41,700
Sweet corn	1949	110	4,600	2,000	4,800	11,400
	1961	28	3,300	550		3,850
Other truck crops	1949	52	9,400	1,900	1,000	12,300
	1961	98	21,000	1,700		22,700
All Truck Crops	1949	1451	$180,600	$ 50,500	$ 75,100	$ 306,200
	1961	2652	774,900	168,350		943,250
Gladioli	1949	30	$ 18,400			$ 18,400
	1961	132	123,450			123,450
Corn	1949	1636			$ 15,800	$ 15,800
	1961	2814			65,200	65,200
Pasture, hay	1949	1346			4,100	4,100
	1961	2643			24,900	24,900
Other crops	1949	306			8,400	8,400
	1961	365			14,200	14,200
ALL CROPS	1949	4769	$199,000	$ 50,500	$103,400	$ 352,900
	1961	8606	898,350	168,350	104,300	1,171,000

APPENDIX B

PHOTOGRAPHS OF THE FLOOD

During and following the flood, photographs were made by newspaper photographers and by TVA engineers. Selected photographs from the considerable number of those collected are reproduced here as Figures 1 to 9.

Credits for the photographs are as follows:

Ewart Ball, Asheville Citizen and Asheville Times, who took Figures 1 and 2.

June Glenn, Jr., Asheville Citizen, who took the cover photo and Figures 3 through 7.

Tennessee Valley Authority: Figures 8 and 9.

The photographs are grouped by the following streams:

	Figures
1. French Broad River	1 and 2
2. Mud Creek	3 to 8
3. Little River and Mud Creek	9

Figure 1. --FRENCH BROAD RIVER OUT OF BANKS

View of the overflow at the Amoco bulk plant on Amboy Road in Asheville, North Carolina. Photo was taken about 8:00 a.m., August 25, 1961; the peak stage was about 0.5 foot higher in the afternoon.

Figure 2. --AIRFIELD AND MOTOR SPEEDWAY FLOODED

View shows French Broad River overflow at Carrier Airfield and Asheville Motor Speedway on Amboy Road. Photo taken at 8:00 a.m., August 25, 1961, when the stage still lacked about 0.5 foot of being at the crest.

Figure 3. --GOING WAS WET AT HENDERSONVILLE

Stalled automobile had to be abandoned to the flood water of Mud Creek on South King Street in Hendersonville, North Carolina, on the afternoon of August 24, 1961.

Figure 4. --RAIN CONTINUES AS GREENHOUSE FLOODS

Mud Creek and its tributary, Britton Creek, flood the greenhouse of Camp Florist on U. S. Highway 25 in the Druid Hills section of Hendersonville, North Carolina. The photo was taken at 2:00 p. m., August 24, 1961, shortly before the peak.

Figure 5. --MUD CREEK FLOOD SWEEPS PAST RESTAURANT

Looking across U. S. Highway 176 toward Johnny's Drive In restaurant at Hendersonville, North Carolina. Photo was taken at noon before the flood peak arrived here.

Figure 6.--TEMPORARY LAKE AT HENDERSONVILLE

Overflow from Mud Creek at noon on August 24, 1961, forms a shallow lake at the intersection of U. S. Highways 25 and 176 in Hendersonville, North Carolina. The flood peak occurred later in the afternoon.

Figure 7. --FLOOD APPROACHES RADIO STATION

Overflow from Devils Fork near radio station WHKP, Hendersonville, North Carolina, at noon on August 24, 1961. The flood entered the studio later in the afternoon.

Figure 8.--FLOOD SCENES ON MUD CREEK

Upper photo shows high water at Johnson Bridge near the mouth of the creek at 9:45 a.m., August 25, 1961. Lower photo taken at 3:00 p.m., August 24, while Mud Creek was rising. This is a view of the Baxter Sinclair Oil Distributor office and warehouse on lower King Street, Hendersonville, North Carolina.

Figure 9. --BEAN FIELDS DAMAGED

Upper photo taken at 2:30 p. m., August 26, 1961, shows bush bean field under water from overflow of Little River at Little River Road. Lower photo shows damage to bean field after flood had receded on Mud Creek near Mountain Home, North Carolina. Lower photo taken on August 30.

APPENDIX C

NEWSPAPER ACCOUNTS

OF

FLOOD

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WEATHER

THE ASHEVILLE CITIZEN

GETTING SET

Dedicated to the Upbuilding of Western North Carolina

92nd Year . No. 237 | 5c Daily . . . 20c Sunday | Asheville, N. C., Friday Morning August 25, 1961 | WWNC Radio 570 CBS | 24 Page

Heavy Rainstorms Flood WNC Sections

A series of heavy storms dropped up to nine inches of rain on sections of Western North Carolina in the 24-hour period ending at 5 p. m. Thursday.

Flood conditions of varying intensity developed over the area. Major highways at times were cut off, business establishments in low-lying areas were flooded and scores of basements were inundated.

Heaviest hit was Henderson County where rainfall was measured at 8.65 inches. There was no estimate of damage there but observers said farm crops were dealt a heavy blow in addition to properties in low areas around Hendersonville.

U.S. 25A FLOODED

Buncombe County had its share of flooding although rainfall in the city measured only 2.71 inches. Sweeten Creek Road (U.S. 25A) was flooded just east of Biltmore and traffic was halted for several hours. Basements throughout Asheville were flooded and city crews were kept busy emptying them.

The huge plant of American Enka Corp., hard hit by floods in the past, escaped major damage but pumps were at work drawing water from low areas which had collected as the result of clogged sewers, and dumping the water into Hominy Creek.

7 SLIDES REPORTED

Slides on highways in the area kept State Highway Dept. crews on the go. At least seven were reported, three on the Ridgecrest-Old Fort Highway (U.S. 70), one at Mine Hole Gap (U.S. 74), one at Marion, one near Linville and one in Avery County. Highway crews kept traffic open around the slides though one-way travel was the rule in most places.

One Avery County man was hurt in a landslide.

The Weather Bureau said the French Broad River crested at Asheville Thursday night after reaching a stage of 8 1-2 to 9 feet. Five feet is bankfull stage and flood stage is 8 feet. The river is expected to crest at 13 feet (flood stage) at Hot Springs during the night.

At 10 p.m., the river had covered the football field on the island at Marshall and was lapping at the school. Marshall merchants were clearing basements.

Highest rainfall readings for the 24-hour period ending at 4 p. m. Thursday, as announced by the Asheville Weather Bureau were: Hendersonville, 8.65; DuPont Plant, near Brevard, 8.05; Rosman, 7.10; Brevard, 4.77.

Rainfall at North Fork in Buncombe County was 2.80 and at Black Mountain, 2.80. Marshall recorded 2.03 inches.

Continued shower activity is expected Friday and fair weather is due in the area Saturday, the bureau said.

The heavy rains fell on ground already soaked with water. Hendersonville, which normally reports around six inches of rain for August, has already had 17.59 inches. Damage to crops in Henderson County was reckoned at more than one million dollars. The total rainfall for a 30-hour period ending Thursday afternoon was 9.16 inches, causing the closing of the Western North Carolina fair. But the scheduled Hereford show was expected to come off on time Friday afternoon.

The Hendersonville Rescue Squad was kept busy. It rescued a truck driver who attempted to drive through water on South King Street and who had to abandon his vehicle. For a time, U. S. 25, both north and south of Hendersonville, was flooded but normal traffic was resumed by nightfall. Lightning killed five cows owned by Claude Kilpatrick near East Flat Rock.

Personnel at Radio Station WHKP on U.S. 64 just east of Hendersonville were manning pumps Thursday night instead of microphones. The station signed off AM broadcasts at 7:06 p. m. and FM at 8:30. By 10 p. m. six inches of water from normally small streams were washing through the studio.

U S. 64, near Horse Shoe was undermined by waters but traffic continued to flow under the direction of a signalman. Another traffic snarl developed in South Hendersonville when the waters of Mud Creek covered the intersection of U. S. 176 and U. S. 25.

In Watauga County, a flash flood was reported at Sherwood, four miles northeast of Vilas, at 4:30 p. m. Thursday. The education building of a Baptist church, the parsonage and post office were flooded. A landslide blocked U. S. 421 for a time and two bridges in the Sugar Grove Community were washed away. A total of four inches of rain was reported for the two days at Boone.

In McDowell County, U. S. 221 was closed by a landslide but was quickly opened to one-way traffic. Coxe's Creek spilled across the same highway six miles north of Marion.

Both the French Broad River and Davidson River were near flood stage in Transylvania County but no damage had been detected. Secondary roads in Transylvania were flooded in a number of spots.

Macon, Jackson, Swain, Cherokee and Clay counties reported heavy rains but no flood damage. Likewise, there were no reports of damage in Haywood County although the Pigeon River was "up a little."

Yancey, Mitchell and Burke counties said rains were heavy but no flooding had occurred.

At Asheville, the waters of Sweeten Creek flooded some business establishments on U.S. 25-A near Biltmore. Water rose to a depth of several inches in a drive-in restaurant and threatened warehouses before receding.

Waters of the French Broad River covered parts of Brevard Road in Buncombe and Henderson counties Thursday afternoon and evening.

The waters of Sweeten Creek had receded by 8 p. m. and the road barriers had been removed. At the Sweeten Creek Drive-In approximately one-half inch layer of mud and silt had washed onto the lot. Some three inches of water had flowed into the drive-in building, causing undetermined damage. Gravel had washed from driveways out onto the highway at different places.

The Swannanoa River was running high Thursday night, but there was at least three feet of bank remaining at Beacon Mfg. Co.

The French Broad River was overflowing on Lyman Street and it was closed late Thursday night.

All along the bottom in that area water stood about 18 inches deep in warehouse lots.

At the Southern Railway trestle on Riverside Drive, the water had overflowed from the French Broad and was approximately four feet deep at 10 p. m. The section between Smith Bridge and Hall Street was closed to all traffic.

On Amboy Road, a trailer was being moved from Marshall's Amoco storage area to safer ground. Water stood from two to three feet deep in the fields in that area at 8 p. m. The lower end of Shelburne Road was blocked for a time as a branch of Hominy Creek overflowed.

Charles W. Dermid, Asheville director of public works, said the entire Street Department force of some 60 men was at work pumping out flooded basements, and that calls for such help were still coming in. Loose earth from construction work had washed partly across streets at numerous points and protective barricades have been put up, Dermid said.

He said the peak of calls on blocked storm sewers came during midafternoon, and that all were believed cleared by early evening.

Tennessee Valley Authority records show that during the last flood rated as "large" at Asheville, that of Aug. 30, 1940, rainfall during the storm period ranged from six to eight inches both in the Hendersonville-Brevard area and at Asheville. Flooding was most severe in the Biltmore area, where the water was two to four feet deep in the business section.

Avery County Man Hurt In Landslide

ELK PARK — Cliff Brewer, about 40, of Elk Park suffered a broken leg and other injuries about 6 p. m. Thursday when he was partially buried under a landslide near his home.

Brewer, who operates a radio and television shop, underwent surgery in a local hospital Thursday night. Heavy rains which have soaked Avery County for the past two days were blamed for the slide which hit Brewer.

THE ASHEVILLE CITIZEN, ASHEVILLE, N. C.
Saturday, August 26, 1961

WNC Assessing Damage In Flood

Threats of a serious flood in Western North Carolina diminished Friday night as skies began to clear and shower activity lessened.

The only remaining threat came from French Broad River which was due to crest slightly above flood stage in Asheville early Saturday morning but which still held some peril for Marshall and Hot Springs down river. Crests predicted by the Asheville Weather Bureau in those two towns indicated no serious damage was to be expected. Both are conditioned to flooding and both had taken precautions.

Elsewhere in the mountain area, flood damage from the heavy rains of Wednesday, Thursday and Friday, was assessed. Henderson County, hardest hit by high water, suffered its greatest loss in damage to summer crops. Small business properties in an around Hendersonville also were damaged by the overflow of Mud Creek.

In Asheville, one truck route was covered by waters of the French Broad, but alternate routes kept traffic moving. A portion of N. C. 191, southwest of the city was still under water. Amboy Road near Carrier Bridge also was covered. Crop damage in Buncombe County was reported light.

Heavy showers early Friday afternoon threatened to return the flood situation to the status of Thursday afternoon, which was perilous. The Friday showers however, were not general enough to cancel the runoff in streams and by late Friday the August flood was written off as "water under the bridge."

One person was believed to have lost his life as the direct result of the angry waters. A man, tentatively identified as F. L. Farmer of Rt. 2, Brevard, drove his car toward Fanning Bridge across the French Broad near Fletcher. The car was swept from the road and later was recovered. Rescue squads are still searching for the body of the driver.

Aside from crops and the few business establishments in low lying areas, Wetern North Carolina's greatest damage appears to have been to highways and bridges.

W. M. Corkill, 13th highway division engineer, said at least eight bridges in his seven-county area had been extensively damaged by high water. Surfaces of secondary roads also suffered, Corkill said, adding that the extremely wet weather probably will delay work on Interstate 40 between Marion and Old Fort.

Landslides occurred on the four-lane highway between Ridgecrest and Old Fort, on U. S. 221 near Linville Falls and at Mine Hole Gap on U. S. 74 in Buncombe County. None completely stopped traffic and all were being cleared away Friday.

J. E. Doughton, division engineer for the 11th highway division with headquarters in North Wilkesboro, said Avery County escaped serious damage but that Watauga County was hard hit in the Cove Creek area: Three small bridges on secondary roads were washed away and U.S. 421 was flooded for a short time Thursday night. Doughton said crews were at work restoring the roads to normal condition.

McDowell County reported crop damage but there was no estimate of its extent.

District Highway Engineer T. M. Austell said all main highways in Henderson County were open for traffic Friday as flood waters receded.

He listed these secondary roads which are still closed because of high water: Fanning Bridge, Jeffreys, North Rugby, Featherstone Creek, Upper and Lower. Balfour, Cummings and Blantyre.

He reported bridges out or damaged on these roads: Howard Gap between Upward and Tracy Grove, Jordan Street west of Fifth Avenue, Upward Road, Crest Road, Hillview Road west of U. S. 64, Blythe Street between N. C. 191 and U. S. 64, Homestead Road off U. S. 64 and East Dana Road east of Dana.

Culverts were washed out on Davis Mountain, McDowell Creek, Old Dana Roads and Little River Road was badly washed.

A preliminary estimate of road and bridge damaged was $150,000.

There was no immediate estimate of other damage. Some 20 businesses were flooded in the Hendersonville area. Dikes along Mud Creek were washed out or damaged and a preliminary estimate of this damage was $50,000. Farm Agent D. W. Bennett estimated that the county's trucking industry had been damaged by the Thursday flood and by the rainy summer as much as one million dollars.

At Asheville, flood waters from the French Broad continued to block all traffic on the Riverside Drive truck route downstream from the Southern Railway trestle. Water on the roadway was three to four feet deep.

Riverside Drive was also flooded farther upstream between Smith Bridge and the old West Asheville bride, but traffic was moving cautiously through the water. Numerous plants and warehouses along Riverside Drive were beset by the rising water, with greatest depths noted at Post Machinery Co., Texas Oil Co. and Hicks Corp. However, there were no reports of major damage.

High water on Amboy Road had stopped operations at Bell Sand Co. and Marshall's Fuel Oil Co., according to Charles W. Dermid, public works director.

Dermid reported run-off water had damaged unpaved Greenbriar Road in the Haw Creek section so badly the road will have to be rebuilt. He said run-off damage to streets and shoulders has been heavy at many points in the city, but that the extent of the damage has not yet been estimated.

He said Street Department crews had pretty well caught up with the job of pumping out flooded basements and clearing clogged storm sewers by Friday afternoon.

The Asheville Weather Bureau said the French Broad River stage in Asheville at 5 p.m. was 9.03 feet, or a little over a foot above flood stage. The river was expected to crest at 9 1-2 feet Saturday morning. A crest of about two feet above flood stage is expected Saturday in Marshall. At Hot Springs, the crest may be only a half-foot above flood stage.

Continued shower activity was expected in the mountain region. The showers are expected to be less numerous than on Thursday and no serious flooding is expected.

Car Swept Into Flood; Body Hunted

FLETCHER—Henderson County Rescue Squad personnel engaged in a day-long search Friday for the body of a man believed to have drowned in flooded French Broad River near here about 7 a. m. Friday.

The victim was believed to have drowned after his car was swept into a flooded field when he tried to drive the vehicle through the water that had inundated the road and Fanning Bridge.

A witness, Warren Ruth of Fletcher, told investigating State Highway Patrolmen that he had seen the driver leave the vehicle, climb to the top of the car and remain there until the car sank. Ruth said the man tried to swim out, but was swept out of sight downstream.

The car was registered in the name of F. L. Farmer of Rt. 2, Brevard, according to the Highway Patrol.

The man is believed to be the first victim of floods which hit Western North Carolina — especially Henderson County—Thursday.

A report that a second person might have been in the car remained unconfirmed.

Sgt. Jack Cabe of the patrol said Rescue Squad personnel in three boats located the submerged car and tied a cable to the door post. The car was pulled from the water about noon. It was empty.

Aiding in the search were members of the Henderson County Sheriff's Department and the Fletcher Volunteer Fire Department.

Another patrolman, Bill Sawyer said he had checked at Farmer's home on old U. S. 64 near Brevard and that no one was in the house.

Cabe, who is acquainted with Farmer, said Farmer lives alone.

The car was washed some 150 yards by the swift water before it sank. It didn't go into the river's banks, but was washed out over a field. Cabe added that the car remained upright and that its top was about six inches under water.

Flood Victim's Body Is Found

The body of Floyd Lang Farmer, 71, who drowned Aug. 25 in the flooded French Broad River near Fletcher, was found about 5:15 p. m. Sunday near the river's banks on Brevard Road.

The body was discovered by two brothers, Leroy Rash, 17, and Gilmer Rash, 19, of 220 Jonestown Rd., Woodfin, who were in a boat conducting a search.

Identification was made by papers on the body and by a son, Floyd J. Farmer of Brevard, and a brother, Oscar B. Farmer of Woodfin.

Dr. John C. Young, Buncombe County coroner, said the body was snagged on a piece of shrubbery near the west shore of the river just beyond the city limits.

Called to the scene to investigate were Sgt. J. D. Baker of Asheville Police Department, Deputies Jack Hutchison, Willard Tate and George Netherton of the sheriff's department, Fire Chief J. C. Fritzgerald and fireman R. B. Noland.

Farmer, a retired carpenter, drowned about 7 a.m. Aug. 25 after his car was swept into a flooded field when he tried to drive the vehicle through flood waters that had inundated the road and Fanning Bridge.

A witness, Warren Ruth of Fletcher, had told investigating State Highway Patrolmen that he had seen Farmer leave the vehicle, climb to the top and remain there until the car sank.

Ruth told investigating officers that Farmer tried to swim out, but was swept out of sight downstream. Later Aug. 25, rescue squads in three boats located Farmer's submerged car and pulled it from the water.

Coroner Carswell of Henderson County Sunday night termed Farmer's death accidental drowning and said no inquest is planned.

The body will be sent Monday to Brevard for services and burial under the direction of Moore Funeral Home.

Surviving, in addition to the son and brother, are another brother, Homer Farmer of Weaverville; and a sister, Mrs. Jennie L. Shertzer of Asheville.

A $100 reward has been offered for recovery of Farmer's body.

The Asheville Citizen
9/4/61

Getting Fatter
Cornward Jackpot Climbs To $200 Details On Page 3

THE ASHEVILLE TIMES

Home Edition
16 Pages

65th Year — No 203 AP, AP Wirephoto Asheville, N. C., Friday Evening, August 25, 1961 • WWNC Radio 570 CBS Five Cents

High Waters Claim One Life, Do Heavy Crop Damage

Crops Hard Hit, Roads Flooded

Car Reported Off Fanning Bridge Near Airport

BULLETIN

At least one man perished today when an automobile plunged into the French Broad River at Fanning Bridge. The car was recovered shortly before noon but identity of the driver had not been determined.

Torrential rains struck Western North Carolina a damaging blow yesterday as streams roared from their banks, blocking traffic, undermining roadways and forcing the closing of one school today.

Damage to crops—especially in hard-hit Henderson County—is expected to run into the millions of dollars.

Rainfall in Henderson County ranged up to more than 10 inches for the 24-hour period ending at 7 a.m. today. At Hendersonville a total of 10.55 inches fell. At least two streets in the city were still closed to traffic today.

At least three major thoroughfares in the mountain section were partially blocked by landslides or flood waters today.

W. M. Corkill, 13th Highway Division engineer, said the French Broad River covers about half of the pavement on N.C. 191 at Sandy Bottoms in the Bent Creek section. One-way traffic is being maintained there as well as on U.S. 74 at Mine Hole Gap—where state crews are still working to clear a landslide.

A landslide also blocks one lane of U.S. 221 near Linville Falls. Corkill said he expects those slides, as well as a number of smaller slides in the division, to be cleared today.

At least eight bridges on secondary roads in the division—which is comprised of Buncombe, Madison, Mitchell, Yancey, McDowell, Burke and Rutherford counties—were extensively damaged by surging waters and have been closed, Corkill said.

Glenn Bridge road, which runs from Arden to N.C. 191 near Avery's Creek, is blocked by flood waters from the French Broad River.

Corkill said there is considerable damage to numerous roads and highways in the division. He added that the wet weather has caused a delay in all road construction in the division. The work stoppage may delay the completion of the stretch of Interstate 40 between Old Fort and Marion, Corkill said. He added that the completion date had tentatively been set for Dec. 25.

Flood waters from the French Broad River covered the football Field at Marshall High School—located on an island in the river—and the school was closed for today. Observers there reported only minor damages from the high water.

Road conditions were much improved in Henderson County today but farmers were sadly examining their ruined crops. Fields along the French Broad were still inundated but the water which overflowed from smaller streams was receding..

U.-S. Highway 25 was blocked by high water both north and south of Hendersonville yesterday afternoon, but the water had receded enough today to allow a normal traffic flow.

In Hendersonville, King street is still under water from Mud Creek and a number of businesses along the street are flooded. Overflow from a storm sewer and a culvert undermined fifth avenue at Jordan street, forcing the closing of the intersection.

Flood waters from Mud Creek caused quite a bit of damage to homes located in low-lying areas along King, Caswell and Church streets.

Rescue squads from Skyland and Hendersonville were called to Fanning Bridge near Fletcher at mid-morning after it was reported an automobile had plunged into the swollen French Broad there.

By noon no trace of the car had been found and the identity of the occupants had not been established.

High water forced radio station WHKP to abandon broadcasts so personnel could man pumps in an effort to keep the station from being flooded. But by 10 p. m. water was flowing freely through the studio despite the pumping efforts.

Heavy rains were reported in Macon, Jackson, Swain, Cherokee, Clay, Yancey, Mitchell and Burke counties but no flooding was reported.

Rains, High Waters Cause Heavy Loss In Henderson

An Avery County man suffered a broken leg when he was caught in a landslide near his home at Elk Park about 6 p. m. yesterday. He was identified as Cliff Brewer, 40, operator of a television and radio shop. Heavy rains were blamed for the slide.

The Asheville Weather Bureau reported the French Broad River here was expected to crest at about nine feet by noon today. Forecasters said the river reached a crest of 8.54 feet at 1 a. m., then began receding. The water began rising again around 9 a. m. and by 10:30 a. m. the level stood at 8.54 feet. Flood stage is eight feet.

At Marshall the river is expected to crest at about 10.5 feet at noon. Flood stage there is 10 feet. Farther north, at Hot Springs, a crest of 13.52 feet is expected by noon. The flood stage there is 13 feet.

The weatherman today said no more heavy rains are in prospect for the mountains but he added that some scattered showers and thunderstorms are expected at least through next Tuesday.

The forecast calls for cloudy to partly cloudy skies today, tonight and tomorrow with moderate temperatures.

High readings for today and tomorrow are set at about the middle seventies and a low of 62 is forecast for tonight.

In Asheville, where 2.11 inches of rain fell in the 24-hour period, the French Broad River surged from its banks along Riverside drive and forced the closing late last night of the city's truck route.

Charles Dermid, director of public works, said the water stood three to four feet deep over the Riverside drive truck route near the Southern Railway trestle. The river also covered Riverside drive at a deep curve near the Asheville Livestock Yard.

Dermid said the street department had a crew of 45 men working throughout last night to pump out flooded basements; unplug stopped-up storm sewers and clear streets of the mud which washed onto them at numerous spots.

Dermid said run-off water had almost completely washed away Greenbriar street, an unpaved road in the Haw Creek section. He added that residents along the street could still "wobble a car" along the street but that the road would have to be completely rebuilt.

Sweeten Creek highway (U. S. 25A) was partially blocked when run-off water and water from Sweeten Creek washed mud, gravel and trash onto the thoroughfare yesterday afternoon.

But the creek receded quickly, city crews cleared the road and the normal traffic flow was resumed by about 8 p. m., Dermid said.

The weatherman said smaller streams in the mountain area are expected to continue receding today unless another storm develops. He added that most smaller streams were running at or slightly above the flood stage during most of last night but that they started falling off this morning.

Rainfall figures from other areas included Pisgah Forest, 8.32 inches; Rosman, 8.70 inches; Marshall, 5.45 inches; North Fork near Black Mountain, 4 inches; Swannanoa, 2.62 inches, and Mt. Mitchell, 4.67 inches.

PACK MEMORIAL PUBLIC LIBRARY
ASHEVILLE, NORTH CAROLINA

Flood Waters Recede; Danger Believed Over

High waters in the mountain section continued to recede today as weather forecasters predicted that the danger of more serious flooding is past.

All major highways and most secondary roads in the western counties are clear, but some of the secondary roads—especially in Mitchell and Henderson counties—were left in bad condition as flood waters fell off.

B. E. Conley, district highway engineer, said state crews who do not normally work on Saturday — are working in Mitchell County to get secondary roads in shape for school busses Monday.

In Henderson County it was estimated that high water caused some $150,000 damage to secondary roads and bridges. T. M. Austell, district highway engineer for Henderson County, said five bridges on secondary roads were either washed out or badly damaged.

Mountain skies remained cloudy today and forecasters said there is no indication of a general clearing trend in the next day or two. They hastened to add, however, that no general rain is expected.

Some scattered showers or thunderstorms may develop during the afternoon and evening hours today and tomorrow, according to the forecast.

The weatherman said the sun may be able to peek through the clouds at intervals tomorrow but added that the day is expected to be mostly cloudy.

Top temperatures of 77 and 78, respectively, are forecast today and tomorrow. Tonight's low reading is set at 63.

A shower which began about noon here yesterday dumped .56 of an inch in the gauge atop the Federal Building, bringing Asheville's total for the month to 6.58 inches.

Yesterday's top reading was 74 under cloudy skies and the bottom mark last night was 63.

The State Highway Patrol said flood waters from the French Broad River still cover Fanning Bridge road near the Asheville Airport.

Rescue squads from three counties were still dragging the water near Fanning Bridge this afternoon for the body of a motorist believed to have drowned when his car was swept off the road by flood waters early yesterday.

The car was recovered about noon yesterday. The Patrol said it was registered in the name of F. L. Farmer of Brevard RFD 2. Farmer was not at his home when patrolmen checked the house yesterday and the Patrol said there was still no word of his whereabouts.

Hendersonville, Haywood County and Polk County rescue teams—as well as Henderson County sheriff's deputies and several volunteers—are participating in the dragging operation.

Flood waters from Mud Creek have receded from the low-lying section of King street in Hendersonville and business men whose firms were isolated by the high water began digging out this morning.

The Weather Bureau reported water in the smaller streams is falling rapidly and that the French Broad River here has fallen more than a foot from last night's crest of 9.04 feet.

At 10:30 a. m. the river stage stood at 7.96 feet — just slightly below the flood stage of eight feet. The crest was reached here about 6 p. m. yesterday.

Marshall's crest last night was 10.5 feet — half a foot above the flood level—and the crest at Hot Springs was 13.1 feet. Flood stage there is 13 feet.

Asheville's truck route was reopened about 6 a. m. this morning as flood waters fell back toward the French Broad River.

Charles Dermid, director of public works, said about half the roadway of Riverside drive near the Southern Railway trestle is still under water but that the route is easily negotiable for large trucks.

He added that high water signs have been placed along the route and that auto drivers should negotiate the route with caution.

Dermid said city street crews were called out for emergency duty this morning to clear minor dirt slides from streets and to clean out blocked culverts.

Asheville Times
8/26/61

Skies Open Wide, 4-In. Deluge Dunks Area; More Seen

Henderson County appeared today to be the center of a rain which began last night and had deluged the area with 3.91 inches of water by 8 o'clock this morning.

The forecast, issued at Asheville at 10 o'clock today, said the rain would not end completely before Friday morning.

Last night's 3.91 inches brought the August total to 12.34 inches. The normal rainfall for the entire month of August is 6.13 inches.

Henderson County appeared to have been hardest hit by the waters, with Rosman reporting 3.69 inches, Pisgah Forest 2.12 and Asheville 1.20 up to 8 o'clock this morning.

One unofficial report said that an inch-and-a-half of rain fell here between 8 and 10 a.m.

Principal streams in the county had not flooded to any great extent by noon today. Mills River was not out and French Broad River was reported as at bank level with some flooding in the lower areas.

Mud Creek and smaller tributaries flooded.

At noon water from Mud Creek was over U. S. 25 at the bridge and traffic was proceeding cautiously. U. S. 64 was under water just east of the city limit for a time this morning.

Meadowbrook Terrace at Druid Hills was under water where it joins U. S. 25.

Fisher's Coal Yard and the Sterchi warehouse were inundated by Mud Creek on the southern edge of the city. Other business establishments in this area were isolated on King Street. Some business establishments were using sandbags in this area.

The 7th fairway at the Hendersonville Country Club was reported under water.

A state highway truck skidded on wet pavement in front of WHKP during the morning and anw went into a three-foot ditch. Traffic was halted for some 15 minutes while the truck was being pulled from the ditch.

The driver was uninjured and the truck was not damaged.

Other traffic accidents were reported at Five Points and just north of Fourth Avenue on Church Street. Details were not available.

Apparently, the heaviest part of the rain extended to about the south end of Hendersonville. Residents of East Flat Rock, where the fair is being held, said the rain had not been extremely heavy during the morning.

Hendersonville Times-News
8/24/61

WEATHER
Showers possible tonight, Saturday.

Did You Know?—
Miller's has night depository for after hours at plant on King St.

The Times-News

SERVING HENDERSONVILLE AND THE SOUTHERN HALF OF THE BLUE RIDGE HIGHLANDS

TEMPERATURE
THURSDAY
High 75
Low 62
6 p m 63
Low Last Night 61
8 a m Today 65
Rain (6 p m yesterday) 9.16 inch
To 8 a m today: .20 inch

VOL. 86—No. 203 HENDERSONVILLE, N. C., FRIDAY, AUGUST 25, 1961 SINGLE COPIES, FIVE CENTS

County Starts Mopping Up After 9-Inch Inundation

Damage May Top 'The Flood' Of '16

By J. T. FAIN JR.
Times-News Managing Editor

Henderson County began today to assess the damage resulting from yesterday's flood, which on preliminary estimates may well be the greatest in the county's history, surpassing even "the flood" of July 1916.

Damage to roads and bridges, to individual business establishments and a sizeable loss for the county's trucking industry may send the total to a million dollars or more. The exact damage in many cases cannot be immediately determined.

The flood came yesterday following rainfall of 9.16 inches in the 20-hour period from 10 p.m. Wednesday to 6 p.m. Thursday. This included 3.91 inches from 10 p.m. Wednesday to 8 a.m. Thursday and an additional 5.25 inches from 8 a.m. to 6 p.m. yesterday. An additional .20 inch was recorded between 6 p.m. yesterday and 8 a.m. today.

Rainfall for the 24-hour period was the third highest in 62 years of weather records, exceeded only by a fall of 11 inches on June 16, 1943, and by the 9.92 inches which fell on July 16, 1916, and brought on the great flood of that year.

In 1916, however, there had been nine days of previous rain and the 10-day total was 19.31 inches. The 1916 flood was also intensified, by the breaking of dams at Kanuga and Highland Lake.

At the height of the flood yesterday afternoon, water covered U.S. 25 and U.S. 176 south of the Mud Creek Bridge, U.S. 64 just east of the city limit and U.S. 64 west at Horse Shoe, old Spartanburg Road and numerous secondary roads and streets in Hendersonville including South King, Caswell, Barnwell and Geneva. Kanuga Road was under water in the State Street vicinity.

Fifth Avenue West at Jordan Street was closed because of water damage and the danger of a collapse. Repairs were being made today.

Water covered South King to a depth of four to five feet. An automobile with five passengers and a bottling company truck were stalled at this point and occupants were removed by boat by the Hendersonville Rescue Squad.

POSSIBLE FLOOD VICTIMS SOUGHT

A hunt for possible flood drowning victims continued here this afternoon without anyone knowing if there was a victim.

Members of the Hendersonville Rescue Squad and other volunteers, with the help of a wrecker from Fletcher Motor Company, pulled a 1953 Buick from about eight feet of water shortly before noon on Fanning Bridge Road near Fletcher.

No one was found in the car, which had been swept some 100 feet from the road by swirling water which had overflown the French Broad River, covering acres of farming land.

An eyewitness to the mishap, Bob Smith of McDowell Creek Road, said he and his wife stopped their car at the edge of the water but the Buick, which was just in front of them, attempted to cross a section of road covered by water.

Smith said at one time a man crawled out of the car and stood on its top before attempting to swim to shore. He said the man went down a considerable distance from the sunken car.

A stretch of road some 200 yards long was covered by water. The car apparently submerged about half way across and then floated some 100 feet before filling with enough water to sink.

The owner of the car was identified by the license plate as F. L. Farmer of Brevard. Officers there reported that no one was at the residence when they went to Farmer's home.

THE OUTLOOK:

More rain is likely to fall tonight and Saturday, the Weather Bureau reported today, but will be mostly in the form of scattered showers and thundershowers. Showers were reported in various sections of the county this morning.

Flood waters were receding today. District Highway Engineer T. M. Austell said all main highways were open to traffic although water covered the roads in some places.

Austell listed, however, these secondary roads still under water and closed to traffic: Fanning Bridge, Jeffreys, North Rugby, Featherstone Creek, Upper and Lower Balfour, Cummings and Blantyre.

He reported bridges out or damaged on Howard Gap Road between Upward and Tracy Grove, Jordan Street west of Fifth Avenue, Upward Road, Crest Road, Hillview Road west of U.S. 64, Blythe Street between N.C. 191 and U.S. 64, Homestead Road off U.S. 64 West and east of Dana on East Dana Road.

Culverts were washed out and slides occurred on Davis Mountain Road, McDowell Creek, Old Dana Road, U.S. 176 and U.S. 74 and the Little River Road was badly washed.

A preliminary estimate of road and bridge damage was $150,000.

In the Hendersonville area from 15 to 20 businesses were flooded, mostly in the southern edge of the city in the King Street - Church Street - Willow Street - U.S. 25 - U.S. 176 area.

Another area of high water was at Druid Hills where Meadowbrook Terrace joins U.S. 25. Camp's Flower Shop and greenhouse was flooded to a depth of about six feet and garages and out buildings of homes in this area were flooded. Water covered the parking lot at Kalmia Dairy but did not enter the building.

In the southern sector water rose to within a few inches of the floor at J. R. Powell and J. R. Thomas Packing Houses and the W. A. Baxter Oil Co. and flooded the yard of the Pure Oil Co.

At the Baxter plant some 70 barrels of oil, weighing 420 pounds each, floated off the yard. They were recovered last night and tied down. A fuel tank also floated down Mud Creek but was recovered at the Old Spartanburg Road Bridge.

At Atha Plaza on U.S. 25 South, Dorn's Grocery, Western and Southern Insurance Co., Skyland Beauty Parlor and Whitley's Drugs had about six inches of water. At Scott Supply Co. in this area rubber mats were piled behind doors to keep out the water.

In this general vicinity the Northwestern Bank branch was flooded to a depth of about six inches and water entered the Deluxe Cleaners building to a depth of some 23 inches.

From 26 to 40 inches of water flooded Brock's Ice Cream Bar and pumping operations were underway today.

Water poured through Mace's Grocery on Willow Street.

Tom's Park, where the state shuffleboard tournament was underway, was flooded.

Some businesses in the southern sector fared better. Water was not high enough to enter a building occupied by Harrell's Super Market, Blackwell's Restaurant and Hyder Floor Covering Service.

Serious damage occurred at the warehouse of Sterchi Furniture Co., near the 25-176 junction. The building, filled with furniture, was flooded to a depth of about five feet, three feet above an interior platform that was built after a previous flood.

During the afternoon there was scattered lightning. Five cows owned by Claude Kilpatrick of the East Flat Rock area were killed. Southern Bell Telephone Co. reported about 200 telephones out of service over the county. All service was expected to be restored this afternoon. Duke Power Co. reported only minimum damage and service was restored by 7 p.m. yesterday.

The Hendersonville Rescue Squad maintained a standby watch. One woman resident of Broadway Street was evacuated by boat as a precautionary measure when water surrounded the house.

Radio WHKP was forced off the air last night when water entered the building on U. S. 64 East. The transmitter and office was flooded to a depth of about six inches. Pumps supplied by the Hendersonville and Valley Hill fire departments were used to clear the building during the night. The station was expected to be back on the air about noon today.

About 7 p.m. last night about 75 migrant workers were evacuated by boat from the J. R. Thomas camp on old Spartanburg Road just south of Mud Creek. Evacuation was necessary after a dike on the creek broke.

Bo Thomas of the company reported this morning that all dikes along Mud Creek and tributary streams were washed out or damaged. Replacement cost was estimated at about $50,000.

French Broad River went above flood stage early last night and was still above flood level today with lowlands flooded. Mills River left its bank at low places but remained in its banks in the vicinity of N. C. Highway 191.

The loss to the produce and shipping industry is expected to be severe. One producer said he would be satisfied with a 25 per cent recovery.

Farm Agent D. W. Bennett said the flood loss to the truck industry from yesterday's flood, and from previous rainy weather, would approximate a million dollars.

In addition, there was extensive damage to pastures, corn and hay from high water and silt.

Flood gates at Osceola Lake were opened yesterday morning when the water level rose several feet and threatened the dam. Several houses in this area were flooded and there was damage to docks and boats.

During the hard rain some seven minor traffic accidents were reported in Hendersonville, mostly attributable to the drowning out of brakes.

Other WNC Areas Less Hard Hit

By United Press International

High waters from flash floods, which forced the evacuation of numerous families and livestock from the mountain lowlands, began receding early today as heavy downpours tapered to scattered showers.

Families in the lowlands of Henderson, Watauga and Avery counties fled their homes as water poured into them from swollen mountain streams and rivers.

There was one reported injury and many traffic accidents were blamed directly on the weather.

The hardest hit area was Hendersonville and outlying sections of the county, where gross damage was expected to surpass $1 million. However, the rains apparently did not harm the county's $2 million apple crop.

Tobacco crops, still in the field in the Sugar Cove section of Watauga County, were raked by the swirling waters. Damage was estimated at "several thousands of dollars."

The only reported casualty was identified as Cliff Brewer of Cranberry. His leg was broken when an embankment slide tumbled down on his home. Officers said Brewer was standing in his backyard when the dirt toppled down, knocking him away and thudding against the house.

The flash flooding hit Avery, Buncombe, Transylvania, Madison and Watauga counties, causing bridge washouts, earth slides and major highway closings.

Highways in Avery and Watauga counties were drowned under six to 12 inches of gushing water. Small bridges on secondary roads were washed out.

Five ponies in the Cranberry area were washed away. A car slipped into a water-filled hole and a wrecker, trying to pull it out, also slid into the mire.

Workers and rescue members manned industrial dikes around lowland mills at Enka in Western Buncombe County, eight miles from Asheville. The threat came when Hominy Creek passed bankful and approached flood stage.

Hendersonville Times-News
8/25/61

Highway Head Arrives, Tells Repair Plans

Plans for emergency repairs to roads and bridges in Henderson County after the Thursday flood were announced here yesterday afternoon by N.C. Highway Commissioner Clint Newton of Shelby.

Commissioner Newton came here to make a personal inspection of damage and toured the damage areas with District Engineer T. M. Austell and Maintenance Superintendent Bob Gash.

After the inspection, he contacted Highway Director Babcock in Raleigh to make plans. Newton also said that Governor Sanford had been made aware of the situation.

"We feel that this is a crash program," Newton said. After a more complete survey, the local highway office is authorized to draw trucks and other equipment and stone for road repairs and equipment for bridge maintenance. Initially, the local office will draw on its maintenance budget and when this is exhausted emergency funds will be granted. No limit has been fixed, he said.

Hendersonville Times-News
8/26/61

Flood Peril Dips Despite Heavy Rains

Despite heavy afternoon showers in the Asheville vicinity Saturday which brought to 1.08 inches total rainfall for the 24 hours ending at 5 p. m., flood danger from recent high waters along the French Broad River have diminished.

In Hendersonville and other sections of Henderson County, hardest hit by Thursday's floods, conditions were nearly normal.

In the aftermath, the Henderson County Rescue Squad, aided by squads from Polk and Haywood counties, continued Saturday a search for the body of a man, believed to be F. L. Farmer of Rt. 2, Brevard, who abandoned his car Friday morning when it was pushed from Fanning Bridge Rd. into a field by rushing waters from the overflowing French Broad River.

Riverside Drive, Asheville's truck route, was reopened about 6 a. m. Saturday as flood waters fell back toward the French Broad, which dropped below flood stage late Saturday morning.

State highway crews in Mitchell County spent Saturday getting secondary roads in shape for school buses Monday. All major highways and virtually all secondary roads in Western North Carolina are clear and open to traffic.

Sunday's forecast for the Asheville area, however, calls for considerable cloudiness with scattered thundershowers occuring mostly in the afternoon and evening. The high temperature is expected to reach 78.

Saturday's high in Asheville was 80 with a low of 63. The humidity, which was 93 per cent at 8 a. m., dropped to 60 per cent at 1 p. m. before afternoon shower activity ricocheted the reading to 91 per cent at 5 p. m.

The Asheville rainfall excess for the month now stands at plus 4.63 inches.

Asheville Citizen-Times
August 27, 1961

Flood Damages In Transylvania To Run More Than Half Million

Transylvania, like the rest of the counties in Western North Carolina, suffered heavy crop damages during and following the flooding of the bottomlands last weekend.

Conservative estimates of damages are running more than a half million dollars.

This does not include damages to primary and secondary roads, bridges and private roads.

One Transylvanian is believed to have lost his life as a direct result of the angry high waters.

A man, tentatively identified as F. L. Farmer, of route two, Brevard, drove his car last Friday toward the Fanning Bridge road across the French Broad near Fletcher. The car was swept from the road and was later recovered.

Rescue squads are still searching for the body of the driver.

The total of the heavy rainfall in three different areas in the county for Thursday, Friday and Saturday is as follows:

Dupont plant, Cedar Mountain — 10.37

Olin Mathieson, Pisgah Forest — 6.75

Brevard weather station — 7.31

One of the most spectacular sights caused by the high waters was the dam at Cascade Lake where the water going over the top of it was more than six feet high.

The dam of the reserve lake at Cascade was washed out by the high waters.

Damages to streets, sewers and sidewalks in Brevard were reported by Town Manager Bill Edens to be extremely light.

County Agent Jim Davis says that farmers are still unable to work the fields in the lowlands because of the water and mud.

Crops most severely damaged were corn, Irish potatoes, beans, hay and gladioli.

Brevard Transylvania Times
8/31/61

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